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REPORT AS TO PRESENCE OF GERMAN SUBMARINES PROBABLY BASED ON FACTS.

DISPATCHES from Washington state that the Government has received information that a large number of submarines "capable of attacking seacoast cities, some of which might be used on the American coast," have been built by Germany, and that some of them are now probably in the Gulf of Mexico and some near Cuba. If this report, which is probably based on facts, should prove to be true, it will merely be the fulfillment of a suggestion made in the MANUFACTURERS RECORD of February 15, when, under the heading, "We Should Be Prepared for German Destructiveness in American Ports," we said:

If we are to credit Germany with the same careful advance preparation in forcing a break of diplomatic relations as in all her other war moves, we may safely count upon her being ready with submarines to enter American ports and seek to destroy shipping and shipyards before we really appreciate that she is ready to hit. She will try to hit first, and hit hard.

Our people should, in advance, look for such a situation and thus not get into a fright and panic when the blow comes, as we fully believe it will come.

We should fully realize in advance the strength and strategy of Germany, and know that when once war has started, if war comes, it will be long and desperate.

It would be foolish to minimize this situation.

The best way to meet it is to look for it and prepare as best we may for it.

MR. BRYAN'S FALSE REASONING.

THE same logic that lends a mayor to keep people off the streets during times of riot would justify this country in keeping citizens of the United States off belligerent vessels.—William J. Bryan.

And so in case of a riot the mayor sits down quietly, keeps all policemen in the stations, tells the rioters he does not propose to enforce law and order and that so far as he and the policemen are concerned, they can have full sway to murder and loot. In the meantime, no citizen must go to his business and no market or milk wagons must move because they might be robbed by the unrestrained rioters and the drivers murdered!

SOME NEROS IN AMERICA.

The fullness of the heart compels the mouth
To speak, and wonted themes must wait a while.

—Compressed Air Magazine.

With these two lines the editor of the Compressed Air Magazine opens a poem as to why in this hour he must discuss world conditions instead of dealing wholly with compressed air activities. That is the position which every thinking man should take, and that is why the MANUFACTURERS RECORD must discuss the mighty issues of the hour.

Nero fiddled while Rome burned, and there seem to be many Neros in this country who prefer to be amused instead of being made to think.

To President Wilson: An Open Letter

OUR enemies know our every weakness far better than our own people, who think we are living in security because we do not know the real situation. Hence, in discussing our unpreparedness from many points of view, you could rouse our own country and yet give our enemies no information which they do not now possess. As Lloyd George has so frankly told England its weaknesses and its dangers, will you not with equal frankness warn the people of this country, that they may be aroused from the lethargy which spells death should we continue as at present? Though our weaknesses and our most vulnerable spots are fully known to you, may I not venture in this statement to emphasize a few of them?

Many of our people, recklessly extravagant in private life, are shocked at national expenditures now when it becomes necessary to safeguard the nation regardless of cost. Money is infinitely cheaper than human life. Billions of dollars—not simply hundreds of millions—spent now might save us from the awful cost in lives and the tens of billions of money which England is paying as a penalty for having been unprepared.

Can you not so state the case as to make the nation see that no money cost is too great to safeguard our country and to prepare us to meet the dangers which confront us?

Can you not so impress this upon the nation as to arouse every man and woman in the country to the supreme necessity of working as vigorously now as England has had to work since the beginning of the war to save itself from destruction, for our people as a whole do not realize the urgency of the situation?

Shall we, from penuriousness or failure to realize our danger, run the risk of sending our soldiers and our sailors to certain death because we would not spend the money needed to equip and train them? and so to increase our navy and army as to give them an equal chance in combat?

Shall we as a nation commit cold-blooded murder of the men who with the broadest patriotism would risk their lives to save us, by sending them into battle inferior in number to their enemies and less thoroughly equipped and trained?

Our navy and army officers have for years pleaded in vain for a realization of this situation, but with smug satisfaction, or misled by some peace advocates, whose proper place is in homes for feeble-minded, or cajoled by the spies and agents of our enemies, we have turned a deaf ear to the advice of the men upon whom our national safety must now depend. When the stress of war comes, as come it almost certainly will, and some disasters befall us, some of our own people will turn, like enraged beasts, upon the army and navy officers because they cannot achieve the impossible, instead of admitting their own blood-guiltiness for having tied the hands of the army and the navy.

May I emphasize a few elements of danger, any

cue of which might prove almost if not fatal to saving the country from destruction?

Practically the entire munition business of the country, and to a very large extent its shipbuilding, is confined to a limited area, stretching from the coast of New England to the Capes of Virginia. While there is a limited amount of shipbuilding on the Pacific coast, the great bulk of shipbuilding for commercial and for naval vessels is confined to the limited territory I have mentioned. In that region we are making practically all the guns, all the explosives, all the shells, which alone would make defense possible in case of war. The great South and Southwest, the middle West and the far West are almost entirely bare of munition-making plants. Is it not, therefore, of supreme importance that, while protecting to the utmost these eastern munition and shipbuilding regions, the Government should recognize that it is likewise of supreme importance to build in the interior, far away from the coast and from dependence upon lake ores, munition plants, including those for the production of guns, shells and every other implement of war? This would involve the adequate development of the steel-making resources of the South and Southwest as far out as Colorado. It is not possible, without almost criminal weakness on our part, to permit the safety of the country to depend upon these plants now producing munitions of war and building ships of war and of commerce in this limited area on the Atlantic seaboard.

On the South Atlantic and Gulf coast, comprising nearly three-fifths of the entire coast line of continental United States and the region which would in war of necessity be the center of naval activity, there is not a single drydock adequate to handling even one big battleship, nor a single naval base nor foundry with facilities for handling and repairing the machinery of a battleship which might be damaged in battle. This amazing situation seems today utterly incomprehensible when we recognize that through the South Atlantic and Gulf ports the country might be destroyed without even having the opportunity to make a fight. This great stretch of three-fifths of our coast line is vulnerable to the extreme. The adequate development of naval bases is not in any way whatsoever a sectional question, but a question vital to the very life of the nation.

In the Gulf coast section, in Louisiana and Texas, are produced at two plants practically the entire sulphur output of the United States, and more than three-fourths of the sulphur of the world. Without this sulphur the nation would be helpless. Is it not absolutely incumbent upon the nation that the most complete facilities for the protection of these plants against any possible danger by land or by sea should be provided, and that, too, immediately?

In the same territory is produced a very large part of the oil, equally as essential as the sulphur in national safety, and further down on the Mexican coast is the world's great oil-producing center,

whose oils feed the fires of shipping of this country as well as of the Allies.

In the Gulf of Mexico and the Caribbean Sea, with the Panama Canal as a danger point, there is a supreme need for stretching every nerve to hasten the building of drydocks, the establishment of private shipyards and of a navy adequate to the dangers and to the vital importance of these regions of the country. Through these Southern ports, unprotected as they are, an enemy might strike into the very heart of the country and split it wide open, and in entering the Mississippi Valley gain control of the cotton-growing section, as well as of the food-stuffs supply, upon which the life of the nation depends.

Though money has been voted by Congress for the building of one or more nitrate plants, we are yet without *any* nitrate production upon which in time of war we would be wholly dependent for explosives. We must draw our supply from Chile, thousands of miles away. Is it not essentially important to hasten the selection of one or more sites for nitrate plants and press their construction as vigorously as it is possible for men and money to do? In the meantime, would it not be the part of wisdom to bring from Chile, regardless of cost of freight, as much nitrate as can possibly be secured at the present time, and hasten this importation by every means possible?

Much of the iron ore which now goes into the making of guns and shells and the building of ships comes from abroad. This entire supply might at any moment be cut off, just as easily as American ships are practically blockaded in our ports because of the submarine threat of Germany. And until similar plants, on a scale commensurate with our needs, are built in the interior, there can be no safety to the country, for so long as we are dependent upon foreign and upon lake ores coming through a canal which might be blocked by the enemy's spies, we are helplessly weak.

These are but a few of the dangers which confront us. Any one of them might prove fatal to the work of the army and the navy. Knowing these facts as you do, will you not present them to the country in such a way as to arouse our people to the necessity of immediate action? The question of the money involved is insignificant as compared to the importance of saving the country. It matters not whether we have to spend one billion or two billions or five billions, if the expenditure will save us from countless billions and from the loss of lives which would be sacrificed through failure to spend this money.

While waiting the action of Congress in passing legislation to make available such expenditures, would you not be justified in calling together a few of the great capitalists of America and, laying these matters fully before them, urge them to show their patriotism by doing as many of these things out of their own wealth as it is possible for them to do, and to do them immediately?

Your influence in presenting these facts to them might stimulate them to increase by every possible means the production of sulphur and its storage somewhere in the heart of the country.

It might stimulate them as a private investment to import nitrates to the utmost limit of the ability of Chile to provide and of their ability to secure ships to bring it to this country.

It might be possible to stir them to the building of steel and munition plants in the interior, as independent enterprises or as branches of existing establishments.

Without waiting on the slow action of Congress

much could be accomplished in this way. Your influence with the leading manufacturers and capitalists of America, if in person you gathered them together and presented these facts, would secure achievements little dreamed of at present. In the meantime your appeal to them and to the nation would quicken the energies of the whole country from one end of the land to the other, patriotism would be awakened, dormant energies would be aroused, the latent power in every man would be brought into action. It would be possible under such an appeal and statement from you to tremendously increase the effective working power of the whole country in carrying on existing business operations, in enlarging our iron and steel production, so sadly needed in the expansion of railroad facilities; in the construction of good roads, available in war as in peace, and in broadening and rounding out and co-ordinating the whole industrial life of the nation in connection with and co-operating with the Government in every way possible in preparing us for the great struggle upon which national life, the world's democracy and civilization itself may depend.

Leaders in Congress and navy and army officers are, like yourself, familiar with all of the conditions which I have outlined, but the country at large is not familiar with the situation. It does not realize our weaknesses, nor appreciate our dangers. It does not see the necessity of a nation at work for preparedness with the same intensity, physically, mentally and financially, which throbs through every pulse of England's life.

It was because England failed to recognize her weaknesses that she has had to pay the awful penalty of the present struggle for existence. Shall we, with this warning before us, move so slowly as to be caught unprepared and be forced through years of agony to pay the same penalty?

Is it not in your power to make the country appreciate these facts and by an appeal to the great leaders in industry and in finance to secure their most vigorous co-operation in the ways I have suggested, as well as in many others that will occur to you?

RICHARD H. EDMONDS,
Editor Manufacturers Record.

Daytona, Fla., March 5, 1917.

GIVING TO THE STARVING WOMEN AND CHILDREN OF EUROPE.

R. E. HARDAWAY, C.E.,
Consulting Engineer.
Railroad Locations and Relocations.
Thirty-five Years Specialist.

Deming, N. M., February 18.

Editor Manufacturers Record:

Enclosed please find a check for \$60 to apply for aid to the war sufferers in Europe—ten dollars each to England, France, Belgium, Serbia, Roumania and Russia—which please endorse to the proper parties to forward economically to destination.

I trust that this is not an unwarranted intrusion on your valuable time, and ask that you accept best thanks for your attention.

I appreciate your editorials in the MANUFACTURERS RECORD very highly.

R. E. HARDAWAY.

The foregoing voluntary letter from Mr. Hardaway of New Mexico, enclosing a check for \$60 to be applied to the war sufferers in Europe, suggests that there may be many others of our readers who would like to contribute to a cause so worthy.

There are millions of children literally starving to death in Europe, and who can be saved only by contributions from America. It is true that there is suffering and sickness in this country, and most people have many calls for help from those immediately about them, but when we think of the unspeakable woe in England, and France, and Bel-

gium, and Serbia, and Roumania, and Russia, and Italy—woe which has been brought upon them not by their own doings, but by enemies—every good impulse of our hearts should be quickened, and we should be stirred, whether we have much or little, to come to the aid of the women and the children in these suffering lands.

Our country as a whole is a land of almost boundless wealth. We are accumulating wealth at the rate of a billion dollars or more a month. Employment is open for almost every man and woman who honestly seeks it. Here we have a land of plenty—a land where physicians and medicines and some comforts are available to almost everybody, even the poorest, but on the battlefields of Europe millions have died, and other millions will die, in behalf of human liberty, and because of this millions of children and of widows are suffering, not only the sorrow of the loss of their loved ones, but actual starvation, day by day, dying for something to eat.

The MANUFACTURERS RECORD has never made an appeal for subscriptions for work of this kind. It has turned Mr. Hardaway's contribution over to the banking-house of Alexander Brown & Sons, one of the oldest in Baltimore. As a member of that firm, Mr. B. H. Griswold, Jr., has long been identified with the raising of funds for aiding the suffering among the Allies in Europe. Any contributions that others may care to send, stirred by the action of Mr. Hardaway, will, unless otherwise directed, be turned over to Mr. Griswold for the same cause, or these contributions can be made direct to Alexander Brown & Sons.

Every impulse of love of mankind, of love of little children, of the desire to see women and children saved from starvation, should be quickened to give, and give freely.

RAMPANT OPTIMISM.

A subscriber to the MANUFACTURERS RECORD writes:

Brighter days are in store for me, I am sure.

The man who wrote this letter had been living in Mexico for twenty-five years. All of his accumulations were swept away and he had to abandon all of his Mexican interests and come out as a refugee on a United States warship with 664 other refugees. On his return to this country, practically starting life anew, he secured employment which enabled him, with his acquaintanceship with the Spanish language, to prepare to do business in Cuba, representing an American house; but of this he says: "Now, to crown it all, we have a revolution in Cuba, and trade is on the bum."

Notwithstanding this situation, he closes his letter with the interesting statement that, though he had a wife and four children to provide for, "brighter days are in store for me."

Optimism such as this is what saves the world from ruin. The man who under these conditions could smile and brightly look forward to better days is of the stuff which makes the real men of the world.

Success to our old subscriber, and may there indeed be in store for him and his family many brighter days.

HOW ABOUT OUR FLAG?

IT is inconceivable that our country should go to war to vindicate the rights of citizens to jeopardize the peace of the nation by going into the danger zones aboard ships of belligerent nations.—William J. Bryan.

But how about permitting our flag to be driven from the sea and our ships blockaded in our own ports, Mr. Bryan?

IF Benedict Arnold were alive, he would feel that he was a cheap piker in comparison with the Senators who have betrayed the nation. Even Judas Iscariot would feel that they were his peers.

Average Grain Production Per Acre in South Increasing More Rapidly Than in West.

A STUDY of corn and wheat yields for each year from 1866 to 1915, inclusive, and in ten-year periods, as compiled by the MANUFACTURERS RECORD from recent publication by the United States Department of Agriculture, brings out many interesting facts in regard to the average yield per acre and makes a remarkable showing for the South.

One of the interesting facts brought to light is that for the United States, as well as for nearly every individual State in the South and many in the North and West, the average yield of corn during the ten-year period 1866-1875 was greater than in the following decade.

For the United States as a whole the average corn yield in the ten-year period 1866-1875 was 26.1 bushels per acre. This decreased in the following ten-year period to 25.5 bushels, and in the next period to 23.4 bushels. Not until the ten-year period of 1906-1915 did the average yield get back to the average fifty years before. And in the ten-year period ending with 1915, the average was 26.6 bushels, or only one-half a bushel more than in the first ten-year period of the half-century.

Similar conditions existed in the West, and practically in every section of the United States. In the North Atlantic section the average of 34 bushels per acre of corn during the first ten-year period steadily decreased to an average of 31 bushels for the ten-year period ending with 1895, but it gradually advanced 38.5 bushels for the last ten-year period. In the North Central East there was a decrease for two ten-year periods and then a gradual advance.

In the North Central West there has been a steady decline from an average of 32.4 bushels for the ten years ending with 1875 to 27.6 bushels for the ten years ending with 1915. In the far West the average has declined from 30.5 bushels in the first period to 24.9 bushels in the last period, though in the last period there was an increase over the preceding ten-year period.

In the South Atlantic and South Central sections the situation as a whole has made a much better showing. Between 1866-1875 the average yield in the South Atlantic section was 14.7 bushels per acre. This slowly declined to 13.9 bushels for the ten years ending with 1895; but in the last ten years there has been a very marked change, carrying the average yield of the last ten years to 19.2 bushels per acre, or an average of 4.5 bushels per acre gained over the first ten-year period. This is decidedly the largest gain made by any section of the country with the exception of the North Atlantic group of States, which show exactly the same increase.

Against the decrease of 4.8 bushels per acre in the North Central West between the ten-year period ending with 1875 and that ending with 1915, the South Atlantic States had an increase of 4.5 bushels per acre.

The South Central section, in the fifty-year period ending 1915, showed an average decrease of 4 of a bushel per acre, but the far West during the same period showed an average decrease of 5.6 bushels of corn to the acre.

If we were to base any theory on the difference between the average yield of corn throughout the country with the exception of the South Atlantic and the North Atlantic States on the decrease in his fifty-year period, the outlook would be most unsatisfactory; but fortunately, the steady decline which has been arrested, and there is now a gradual increase. This is shown in the fact that the average of 23.4 bushels for the country for the ten years ending with 1895 had advanced in the next ten years to 25.2 bushels, and in the ten-year period ending with 1915 to 26.6 bushels per acre.

In wheat the situation is better. The average yield of wheat for the United States for the ten years ending 1875 was 11.9 bushels per acre. Without a single break this gradually increased to an average for the ten years ending with 1915 of 15 bushels per acre, a gain of 3.1 bushels per acre. During the same period the average increase in

wheat production in the South Atlantic States rose from 8.4 bushels per acre in the ten-year period ending with 1875 by a steady gain, which carried the average production for that section to 13 bushels per acre for the ten years ending with 1915. The average wheat yield in the South Atlantic section for the last ten-year period was only .6 of a bushel less than the average for the North Central Western States. These latter States in the fifty years advanced only one-tenth of a bushel per acre on the average, or from 13.5 bushels for the first ten-year period to 13.6 bushels for the last ten-year period, while the South Atlantic States in that time made a gain of 4.6 bushels per acre. The South Central States advanced in the same period from an average of 8.5 bushels per acre to 12.4 in the last period, an increase of nearly 4 bushels per acre.

Thus as a whole, these South Atlantic and South Central States, as shown by the figures of the Agricultural Department, have not only made a larger average gain in wheat production per acre than the entire country, but a very much larger average gain than the North Central Western States, which are supposed to be the very cream of the wheat-producing sections of the country with the exception of the Pacific Coast States.

In the South the average price per bushel for wheat and corn is very much larger than the average in the country at large. Thus the Southern farmer, even with his somewhat smaller yield, gets a much larger gross value per acre for his product than the Western farmer.

During the ten years ending with 1915, the average value per acre of the wheat crop for the North Central Western States was \$11.41, while the average value for the South Atlantic States was \$13.35. This value for the South Atlantic States is larger than the average for the entire country.

In the South Central States the average for the ten years was \$11.41 per acre, or exactly the same as the average for the North Central Western States.

Similar conditions exist in regard to the value of corn per acre, although the difference is not quite so marked as in wheat. The average value of corn per acre for the last ten years in the South Atlantic States was \$14.58, as compared with \$13.24 for the North Central West, while the value of corn for the South Central group of States was \$13.08 per acre. Thus while the yield of corn in the South was smaller per acre than in the North Central West, the difference in price per bushel more than made up the average value per acre.

For the ten years ending with 1915 the average

value of corn for the United States was 56 cents per bushel, but the average in the South Atlantic States was 75.8 cents per bushel, and in the South Central States was 63.4 cents.

The examination of the statistics presented in these Government reports for the last fifty years shows that so far as the United States is concerned, there has been almost no increase in the average yield of corn as compared with the first ten-year period of this half-century review, while in the South Atlantic States there has been the very marked increase of an average of 4.5 bushels per acre. Moreover, the average increase in the yield of wheat per acre has been greater during the last fifty years in the South Atlantic States than in the whole country, and very much greater than the increase in the North Central West. Starting with an average yield of 8.4 bushels in the South Atlantic States for the first ten-year period, this section advanced to an average of 13 bushels for the last ten-year period, while the North Central West started with an average fifty years ago of 13.5 bushels per acre has increased by only one-tenth of a bushel per acre.

A study by States of the yield in the Southern States shows those which during these five ten-year periods have made the most marked advance in the increase of the average corn and wheat production per acre. While much has been done through better cultivation and larger fertilization in increasing the average grain yield of most of the Southern States, there remains much yet to be done. The figures given show a splendid advance in grain yields in the South against a stationary or retrograde condition in the West, and it only remains now for the South to enlarge its grain acreage and increase its livestock interests to more than duplicate the agricultural progress of the West.

THE WEALTH OF TEXAS.

THE census report gave the true value of property in Texas in 1912 as \$6,859,909,141. The increase since then has been very heavy. At that time Texas led California in the true value of property by \$2,740,000,000. In the article by Dr. William B. Phillips, recently published in the MANUFACTURERS RECORD, he dealt with the assessed value of property in Texas, whereas, as large as that is, it does not, of course, approach the remarkable figures as to the true value of Texas wealth. Between 1904 and 1912 the true value of Texas property as given by the census advanced from \$2,836,322,203 to the figures already given of \$6,859,909,141. If Texas has advanced in wealth since 1912 at the same rate as between 1904 and 1912, it has added some additional billions of dollars to its real wealth.

Corn—Ten year average yield per acre and value in Southern States, 1866-1915.

	1866-1875		1876-1885		1886-1895		1896-1905		1906-1915	
	Yield (bushels)	Value	Yield (bushels)	Value	Yield (bushels)	Value	Yield (bushels)	Value	Yield (bushels)	Value
Alabama.....	14.0	\$10.75	12.4	\$7.82	12.8	\$6.97	12.6	\$7.02	16.4	\$13.67
Arkansas.....	25.7	16.40	21.4	10.91	19.2	9.00	17.8	8.16	20.4	13.52
Florida.....	10.9	11.25	9.5	7.55	10.2	6.77	9.3	6.05	13.2	10.40
Georgia.....	11.3	9.00	10.3	6.92	11.2	6.56	10.5	6.40	14.0	11.41
Kentucky.....	29.3	11.90	26.0	10.34	24.9	9.71	25.5	10.33	27.6	16.00
Louisiana.....	18.2	15.18	16.3	10.61	16.2	8.89	16.3	8.75	19.9	13.50
Maryland.....	24.7	15.24	26.0	13.28	23.5	10.67	32.0	13.86	34.9	20.78
Mississippi.....	16.0	12.95	14.2	8.78	14.7	7.83	14.7	7.82	18.3	13.10
Missouri.....	30.1	11.35	28.6	8.93	27.7	8.88	27.4	9.01	27.7	14.74
North Carolina.....	14.3	9.27	13.3	7.47	12.4	6.54	13.4	7.34	18.3	14.62
Oklahoma.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Carolina.....	9.7	8.75	8.8	6.24	10.2	6.13	9.5	5.90	16.7	14.58
Tennessee.....	22.9	10.57	21.4	8.73	21.5	8.78	21.9	9.50	25.2	15.41
Texas.....	22.7	15.56	19.8	11.32	19.6	9.16	17.7	8.34	20.2	13.22
Virginia.....	20.0	11.32	17.9	8.92	17.4	8.23	21.0	9.91	24.7	17.27
West Virginia.....	29.3†	16.28†	25.8	12.82	22.2	11.12	26.4	13.16	30.0	21.74

*Seven-year average.
†Nine-year average.

Wheat—Ten year average yield per acre and value in Southern States, 1866-1915.

	1866-1875		1876-1885		1886-1895		1896-1905		1906-1915	
	Yield (bushels)	Value	Yield (bushels)	Value	Yield (bushels)	Value	Yield (bushels)	Value	Yield (bushels)	Value
Alabama.....	7.6	\$10.31	6.4	\$7.52	6.9	\$6.55	9.1	\$8.62	11.4	\$13.10
Arkansas.....	10.3	13.47	7.1	7.12	8.6	6.82	9.1	6.87	11.5	10.83
Georgia.....	6.9	10.28	6.9	8.57	6.1	5.84	7.9	7.90	10.5	12.99
Kentucky.....	9.2	10.29	9.7	9.19	11.2	8.00	11.2	8.79	12.6	12.09
Maryland.....	10.6	14.73	12.8	14.46	12.3	10.63	15.9	12.72	16.5	15.75
Mississippi.....	9.2	13.88	6.2	7.91	6.9	6.24	9.4	8.34	13.2	13.71
Missouri.....	12.8	13.18	11.4	9.94	12.8	8.18	12.2	8.54	14.1	12.59
North Carolina.....	7.2	9.51	6.6	7.45	6.2	5.39	7.5	6.81	10.4	11.41
Oklahoma.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Carolina.....	6.0	10.51	6.6	9.18	5.7	5.62	7.7	7.97	10.3	13.31
Tennessee.....	7.7	8.81	6.6	6.33	8.3	6.18	9.5	7.91	11.4	11.30
Texas.....	12.8	17.26	10.8	11.06	10.4	7.97	12.3	9.62	12.4	12.17
Virginia.....	8.3	10.63	8.3	8.90	8.8	6.97	10.3	8.31	12.6	12.60
West Virginia.....	*10.3	*12.69	10.8	10.97	10.3	8.13	10.8	8.92	13.2	13.51

*Nine-year average.

THE COWARD NEVER WINS.

REFERRING to a recent editorial in the MANUFACTURERS RECORD, the Asheville (N. C.) Times says:

Since the beginning of this world-wide contest of arms it has been very evident that it was in truth a battle of higher civilization against barbarism. Germany, recognized as a nation of educators, has shamed herself in the eyes of the world with her methods of warfare. The very existence of this nation seems to depend upon the outcome of the struggle.

If Germany wins, what then?

The answer to the Times' inquiry is very simple. If Germany wins against the Allies, it means the doom of the United States, for not in ten years could we possibly, even by spending limitless billions, put ourselves in shape to make a successful contest against Germany if Germany had already conquered the Allies. The man who does not recognize this situation is wilfully blind, as is the man who has not seen that since the beginning of the war the most active opponents to preparedness were the pro-Germans. Why?

Our situation was very clearly stated by a former member of Congress, who recently said:

"The United States is unprepared to fight, and is too fat to run away."

This epigram states the case, and our very fatness invites the cupidty of those who could levy a tribute upon us sufficient to pay all the cost of the war. People are constantly talking about keeping out of war. Mothers are clamoring that they do not want their sons to have to go into war, and the thought in general seems to be that there is some way in which merely by wishing it we can avoid war.

A few days ago a drink-crazed man in Atlanta was trying to murder members of his family. Their cry of distress was heard by a passing minister, who, without a moment's hesitation, rushed to the rescue of the women who were being attacked by the drunkard. The minister was killed, but he helped to save the lives of those who, without his sacrifice, would have been murdered. His death was deplorable. It was most unfortunate that the drunkard was doing his deadly work. But that he was doing it was a fact. That the minister was passing the house and heard the cry of agony from the wife who was being attacked was a fact. Should this minister have closed his ears and said:

"I do not know who these people are. I am not going to risk my life defending a woman whom I have never known. I do not know who the man is that is trying to kill her, and so I will shut my ears and shut out my conscience, and peacefully go my way!"

Fortunately for humanity he did the right thing. He risked his life to save another's. The Atlanta people and the papers have applauded his work as that of a hero, and he was a real hero, and his death will stir thousands and millions to fight whiskey, and thus help to save others. In his death he accomplished more for the benefit of others than he could have done in personal work if he had lived a hundred years. Had he refused to heed the call of distress, had he gone his way unconcerned, he might have saved his life, but through time and eternity he would have called himself a coward, and no man who had known of his failure to measure up to the hour of need would ever have cared to associate with him. Shall the people of this country, young and old, be trained to think that the minister did wrong, that he should not have risked his life to save another's, and that as a craven coward he should have slunk away, pretending not to have heard the call of distress?

Civilization is being murdered. Human liberty is being stabbed to death. All that men have fought for through countless ages, in seeking to bring liberty and civilization to the world, is in danger. This is not a theory. It is a simple fact. Shall we, as we hear the cry of distress from civilization and liberty that are being murdered, turn our backs and slink away, cowardly seeking to shun our responsibility?

But more than that, if the murderous campaign that is seeking to destroy the civilization of Europe should succeed, our time will follow quickly, just as surely as the night follows the day. We are at

the parting of the roads. We cannot turn back if we would. The issue faces us. We do not have to seek it. It is not of our making. We have no more invited it than the woman in Atlanta invited the attack of a drink-crazed husband.

It is very beautiful in theory to say that we believe in peace, we long to live in peace, we would gladly save the people of this country from the horrors of war, and go on increasing in wealth, but it is not ours to decide. The decision has already been made. It is merely a question as to whether we are going to meet the issue with bravery or with cowardice, whether we are going to be prepared to protect ourselves, the women and children and the wealth of the land, and more than all, to protect for all time to come human liberty and civilization, or whether we are going to slink away, and, hampered by our own fatness of wealth, try to run, but try in vain. The destruction will come upon us in that case without our even having had credit of trying to protect ourselves.

The coward never wins.

PRODUCTION OF IRON IN 1916.

THE total production of pig-iron for 1916 was 39,434,797 tons, an increase of 9,518,584 tons over 1915. The production in the South last year, as compared with preceding years, was as follows:

PRODUCTION OF PIG-IRON IN SOUTHERN STATES, 1913-1916.

State.	1913.	1914.	1915.	1916.
Alabama	2,057,911	1,826,929	2,049,453	2,762,885
Mississippi				
Kentucky	315,731	236,393	291,040	554,590
West Virginia				
Maryland	289,959	195,594	251,548	501,452
Tennessee	280,541	216,738	177,729	355,374
Virginia	341,815	271,228	251,346	399,885
Total	3,285,957	2,746,882	3,021,116	4,574,186

These figures show a total increase in the South of 1,553,070 tons, as compared with the increase of 9,518,584 tons for the whole country. While the production in the South last year was much the largest in its history, the progress made is not yet in keeping with the South's natural advantages.

The present situation is one which from every point of view should be utilized to the largest extent possible for the development of the iron and steel interests of the South. During this period of activity—which, it would seem, must of necessity continue for several years—the business men of the South, in connection with those largely interested in iron and steel, should press the development of these interests that this section may take its rightful place as one of the world's leading centers of iron and steel making. Its natural advantages justify this, and the situation of the world's iron and steel trade gives the opportunity for it.

The production of pig-iron by States for the four years from 1913 to 1916, as compiled by the American Iron and Steel Institute, was as follows:

State.	1913.	1914.	1915.	1916.
Mass., Conn.	12,510	6,594	7,802	5,719
New York				
New Jersey	2,187,620	1,559,864	2,104,780	2,352,535
Pennsylvania	12,954,936	9,733,369	12,790,668	16,506,284
Maryland	289,959	195,594	251,548	501,452
Virginia	341,815	271,228	251,346	399,885
Alabama	2,057,911	1,826,929	2,049,453	2,762,885
West Virginia				
Kentucky	315,731	236,393	291,040	554,590
Mississippi				
Tennessee	280,541	216,738	177,729	355,374
Ohio	7,129,525	5,283,426	6,912,962	8,602,895
Illinois	2,927,832	1,847,451	2,447,220	3,922,512
Ind., Mich.	1,775,883	1,557,355	1,986,778	2,221,708
Wis., Minn.	367,326	329,526	372,966	811,325
Mo., Ia., Col.				
Wash., Cal.	324,263	267,777	271,921	437,633
Total	30,966,152	23,332,244	29,916,213	39,434,797

The production of pig-iron by grades in 1915 and 1916 showing increase over 1915 was as follows:

Grades.	1916.	1915.	Increase.
Basic	17,684,087	13,093,214	4,590,873
Bessemer	14,422,457	10,523,306	3,899,151
Foundry	5,553,644	4,843,899	709,745
Malleable	921,486	829,921	91,565
Forge	348,344	316,214	32,130
Spiegelisen	194,002	97,885	96,117
Ferro-manganese	221,532	149,521	72,011
All other	89,245	62,253	26,992
Total	39,434,797	29,916,213	9,518,584

Of the total production of iron 44.85 per cent. was of basic iron, with an increase over 1915 of 4,590,873 tons. The production of Bessemer iron increased by 3,899,151 tons.

BAD BLUNDER OF BIRMINGHAM IRON PEOPLE IN REGARD TO ARMOR PLANT.

FROM a leading business man of Chattanooga, who has been actively working to secure the armor-plate plant for that city, the MANUFACTURERS RECORD has a letter, in the course of which it said:

We had a very pleasant two days' visit with the Board. They are very earnest, energetic gentlemen, and when they have made a selection they will very honestly believe it to be the best, and as all of the Southern cities have stated that they wanted the Board to select the best point, no one will be disappointed. We want the plant, but we do not want it at the cost of its efficiency.

This is the spirit with which the whole situation in regard to the armor-plate plant should be approached. It is entirely natural that every city in the iron regions of the South and Southwest should eagerly desire the location of such a plant, but this plant is not for local or sectional benefit. It is intended for national safety, and not to advance the interests of any people or community. But in being a factor for national safety, it would become a factor for the safety of every city, and therefore every patriotic man should honestly desire its location in the place where it will yield the best results for the whole country.

It looks as though the iron people of Birmingham did not regard the matter from that light. According to reports from that city, they are opposed to the location of the plant in Birmingham, even if the Government should decide that that was the best place, because they did not want their labor conditions interfered with. It is greatly to be regretted, from many standpoints, that the iron people of Birmingham have taken so shortsighted a view and one which relates purely to their own personal private business interests, which they are putting ahead of national safety. They may undertake to argue against this point of view in every way possible. They may claim that they do not believe in a Government plant. They may claim anything else in regard to the matter. But primarily, as it is well known, they are opposed to its location in Birmingham because they do not want Government eight-hour labor in their community.

In the opinion of the MANUFACTURERS RECORD, there are other points in the South equally as suitable as Birmingham for an armor-plate plant. We have not been interested in the slightest in any one particular locality, and it is entirely immaterial, from our point of view, as to where this plant is located, provided it is located at the point which will be to the best interest of the nation; but we regret that any business people in the South, especially the iron people of Birmingham, should put their own private business before the welfare of the nation. This is not the spirit of patriotism that might have been expected in such a city, and if this spirit prevailed throughout the nation we would indeed be in a lamentable condition.

In taking this position the iron people of Birmingham have done themselves and their community far greater harm than it would be possible for eight-hour labor in a Government plant to do them. The Government has at Portsmouth, Va., a great shipyard and is developing this into what will probably be the best naval base in the United States. A few miles away the Newport News Shipbuilding Co. has the largest shipyard in America. The Government plant has not injured the Newport News Shipbuilding Co.'s plant. Both have been in operation for many years. The Birmingham iron people might have learned a lesson from this situation even if they had not cared to consider it from the broad patriotic standpoint.

If, perchance, the Naval Board should make a report to the country to the effect that Birmingham was the best location for this plant, but that the iron people of that city were opposed to its being established there, what a sad commentary this situation would develop upon the patriotism of these Birmingham opposers of the plant! We wonder how they would explain their position to the country.

THIS COUNTRY IS FACING POSSIBLY THE MOST SUPREME CRISIS IN ITS HISTORY.

WHAT appears on the surface in the announcement that Germany has been endeavoring to enlist Japan and Mexico against the United States only gives a hint of the possibilities of danger which may face us ere the world has readjusted itself and peace, in place of the horrors of war, has come to mankind.

The MANUFACTURERS RECORD cannot understand how any thoughtful man who had studied the currents of human events, who knew human history, and who saw that Germany had for nearly half a century been preparing to seek to dominate the world, could by any possibility have mistaken the meaning of this war. From the very beginning it could have been seen that the fight was the final fight of this age of autocracy against democracy; that Germany designedly undertook its campaign of frightfulness in Belgium, in France and in the murder of innocent women and children on the Lusitania for the express purpose of creating such a horror and fear that other nations would prefer to make peace in advance rather than to run the risk of suffering the fate of Belgium. The whole campaign from the beginning was designed with ruthlessness with this end in view, and in this fact is found the explanation of all the awful atrocities committed in Belgium and elsewhere. No man who intelligently studied the whole situation, it has seemed to us, could by any possibility fail to understand this condition.

The MANUFACTURERS RECORD is not at all surprised at the developments in regard to Germany's effort to array Mexico and Japan against us. Two years ago we were advised by a man of the highest scientific attainments and of unquestioned integrity, who had spent fifteen or twenty years in Mexico and who knew that country intimately from every point of view, that he not only knew that German money was fomenting the revolution, but that he knew the bank through which it was being paid out. From other information, some of which was open to the public, it has seemed absolutely impossible to form any other conclusion than that Germany was, even two years ago, vigorously at work in Mexico as well as in other countries seeking to arouse hostility to the United States and making its plans to use those countries when the proper time arrived. Every intelligent man studying the situation from an unbiased point of view should easily have been able to see through the conditions prevailing in Mexico since the beginning of the European war. But back of all that has appeared on the surface there have been other and sinister movements under way.

In the light of this world conflagration, feeling absolutely certain that no power on earth could keep this country from becoming involved in the struggle before it was over except through preparedness, we have sought in every way possible to arouse the people of our country to the need of national preparedness through the building as rapidly as possible of a navy and the creation of an army, realizing that our only means for keeping out of war was adequate preparedness, which would make any country hesitate to attack us.

It is for the millions of young men who may have to be called to the battlefield that we have been pleading. We have realized that to send these untrained, unarmed men into conflict was practically national cold-blooded murder, and every man who, from a mistaken idea as to peace, has fought preparedness will be directly responsible for a large part of the sorrow and suffering and for the deaths that will come through a war for which we are not prepared.

Adequate preparedness would have saved us from the danger of war just as adequate preparedness by England's army would have made certain that Germany did not begin this conflict. But our people, largely led by the blind, have believed, because the wish was father to the thought, that we could go on living in peace and accumulating wealth and nothing need come our way which would interfere and drive us into the world conflict.

It is not possible for any peace-loving man not to

view with unutterable horror the fearful curse of war. It is not possible to overstate what war means in suffering and in death. But even war, with all its horrors, may come upon us at any moment and we may have to fight in order to save ourselves from the destruction of Belgium, or we may have to take part to save civilization from the death which endangers it through the blight of Kaiser Wilhelm, whose hands drip red with human blood as have no other hands in human history.

We may indeed have to fight for our very existence as a country and to maintain the civilization of the world.

Shall we be cowed by the "frightfulness" which has marked Germany's course since the beginning of the war? Shall we be a nation of men, or shall we spinelessly and supinely permit the women and the children of this country to be murdered and ravished as in Belgium and in France, or to be murdered on the high seas as is being done and as has been done since the sinking of the Lusitania?

Shall we permit human liberty, for which our forefathers struggled and died, to be utterly destroyed, democracy wiped from the face of the earth and we become slaves in body as in soul?

These are the questions that face our country. They face us today with terrific power, because for the last two and a half years we have blindly shut our eyes and refused to see and closed our ears and said we would not hear. We have made Germany believe that we loved peace more than honor, that we loved ease and comfort and prosperity more than duty, and, therefore, we have refused to protect ourselves against the international pirates and murderers whose existence endangers our country and the world's civilization.

It is because of these facts that the MANUFACTURERS RECORD has given so much attention to this subject and with all the earnestness in its power has pleaded for preparedness, which would prevent war, or which, if it did not prevent war, would at least give to our soldiers and our sailors the ability to meet in equal combat the enemies which threaten us. Less than this the country could not do without criminal responsibility which will make every man who has fought preparedness share in the responsibility for every death that comes in the war into which we may have to enter.

Our people, blinded by our love of peace, our desire for pleasure and ease and wealth, have largely said: "We prefer peace at any price. We care not for honor, we care not for duty; we want to be left alone to fill each passing hour with pleasure or frivolity or money-making."

And I will say to my soul, Soul, thou hast much goods laid up for many years; take thine ease, eat, drink, and be merry.

But God said unto him, Thou fool, this night thy soul shall be required of thee; then whose shall those things be which thou hast provided?

So is he that layeth up treasure for himself, and is not rich toward God.

As with individuals, so shall it be with nations that forget duty to man and God.

THE MOTTO OF THE MUSKETEERS SHOULD BE THE MOTTO OF THE AMERICAN PEOPLE TODAY—"ONE FOR ALL AND ALL FOR ONE."

QUICK upon the heels of the President's request for authority to arm merchantmen and to use such other instrumentalities and means as might be necessary to protect the lives and ships of America on the high seas came Germany's latest atrocity, the sinking of the Laconia.

The President asked for authority to deal adequately with just such outrages as this. He has asked for authority to halt the murder of Americans on the high seas. That authority should have been granted quickly and ungrudgingly. The ordinary instinct of self-preservation, if not national pride, points to the road of honor. Any other road will lead, not merely to humiliation, but to destruction. Since it has been possible, under the rules of the Senate, for a few men—as President Wilson de-

scribed them, "Willful men voicing no opinion but their own"—to thwart the purpose of the Senate and of the American people, the next step for the President to take, and to take unhesitatingly and immediately, is to arm our merchantmen.

There is a shortage of gunners which may hamper this purely defensive plan and mock the nation in its eleventh-hour preparedness. If the pacifists who opposed preparedness with their cry that there was no need for it, since a million men would spring to arms over night, like cuckoos from a clock, can solve this problem, they will vindicate their cause. If they cannot perform this miracle, they should now and forever hold their peace.

The failure of passage of the armed neutrality bill at the closing hours of Congress will lend comfort to Germany in continuing her murderous course. It was such divisions, accentuated by the soprano cries of the pacifists, that emboldened Germany to make the encroachments that now have brought the nation to the verge of the European vortex.

Nothing but the mailed fist can now bring Germany to terms. President Wilson has been abundantly patient. Even now he says he wants no war, but he has made it plain that we can no longer tolerate murder of our citizens on the seas. The authority to arm our merchantmen, which President Wilson asked, is the same authority which was granted freely to President McKinley by the Republicans, and the few men in the Senate who were the cause of Congress not granting this authority to President Wilson will go down in history as having failed their country in its hour of need.

SOUTH IMMEDIATELY GAINS FROM THE WORK IN BEHALF OF ARMOR-PLATE PLANT.

IN a letter from Mr. Edwin J. Paxton, editor of the Evening Sun, Paducah, Ky., published in this issue, evidence is immediately furnished of the benefits the South will gain through the compilation for the Armor Plant Board of facts about the mineral resources and opportunities for industrial development with which the South is so notably blessed. In the case of Paducah it is recorded that the remarkable "facts developed in the preparation of its briefs to submit to the Naval Board in its petition for the Government armor plant at Paducah" so aroused the enthusiasm of the Board of Trade at Paducah that, without waiting for the action of the Government Board, members of the committee on the preparation of the petition resolved to lay their advantages before manufacturers generally. Accordingly, they made a trip to Detroit, engaged in an advertising campaign, and have already succeeded in signing up for one factory with a prospective payroll of \$250,000 a year, and have in hand inquiries from thirty other manufacturers who became interested in the showing Paducah made.

This is directly in line with the editorial statements made in last week's issue of the MANUFACTURERS RECORD in which it was pointed out that the work done by the Southern communities in gathering together facts for presentation to the Armor Plant Board would be worth many times the cost, whether the armor plant is located at any Southern city or not. The outside world has been given an education as to the wealth of resources the South contains, which education would have been impossible to provide to the same extent by the expenditure of many times the amount of money these demonstrations have involved.

Not only will the outside world have an altogether more comprehensive knowledge of Southern resources and industrial opportunities, but the local people of the Southern communities which have taken part in these demonstrations will undoubtedly be aroused to a greater appreciation of their opportunities than would have been possible in any other way. By studying their own conditions the people of these Southern communities will be able hereafter to more intelligently set forth the resources and opportunities which their localities contain, and thus a work of tremendous advantage to the South has already been accomplished.

\$533,000,000 Provided by Congress to Strengthen Navy of United States

[Special Correspondence Manufacturers Record.]

Washington, D. C., March 5.

Passed without a roll call in the Senate and swung across over the dissenting votes of 23 opposing members in the House, mostly of the extreme pacifist persuasion, the greatest naval bill in the history of the country was made a law near the close of the last session. The final action was taken on March 1, after hurried conferences between Democratic and Republican leaders. At the last moment Senator Jones succeeded in attaching an amendment, striking out the clause making it a crime for shipbuilding and other industrial concerns to refuse to surrender their plants to the Government in time of war or other proclaimed emergency.

The bill had been sent to the Senate from the House on February 18. The House vote on the preceding day showed the following in opposition to the bill:

Republicans—Cramton, Michigan; Hollingsworth, Ohio; Lindbergh, Minnesota; Nelson, Wisconsin.

Socialist—London, New York.

Democrats—Bailey, Pennsylvania; Burnett, Alabama; Callaway, Texas; Davis, Texas; Doughton, Kitchin and Page, North Carolina; Gordon and Sherwood, Ohio; Saunders, Virginia; Sears, Florida; Sisson, Mississippi; Tavenner, Illinois; Thomas, Kentucky; Thompson, Oklahoma; Tillman, Arkansas; Huddleston, Alabama; and Johnson, Kentucky.

As it passed the House the bill called for an appropriation of more than \$368,000,000. The anticipation that this sum would be largely increased in the Senate was fulfilled. The bill in its final form calls for an expenditure of \$533,000,000, or a much larger amount than appropriated at any previous time.

For a time before its passage by the Senate the bill was menaced, through the refusal of the House to accept a Senate amendment authorizing a bond issue of \$150,000,000 to meet added expenses provided for in the bill as it passed the Senate. This was due to the jealousy of House leaders regarding the prerogative of their body to originate all appropriation measures. It was finally agreed that both Houses should put through a joint resolution, originating in the House, authorizing the bond issue, of which \$115,000,000 is to be used in rushing to completion vessels now under construction and \$35,000,000 for 50 additional submarines provided for by Senate amendments.

On the motion of Senator Lodge of Massachusetts all moneys appropriated in the bill are made immediately available. This action was taken by the Senate because of the existing crisis in the affairs of the country.

Effort to attach the administration amendments empowering the President to commandeer American ships in an emergency failed because Republican Senators would not consent to their passage without debate. Under the agreement which called for a final vote Vice-President Marshall ruled that there could be no separate vote on amendments after that hour, thereby killing various pending measures.

The great construction program provides for the building of 3 battleships, 1 battle cruiser, 3 scout cruisers, 15 destroyers, 1 destroyer tender, 1 submarine tender, 58 coast submarines, 10 fleet submarines and 3 coast guard cutters.

A bond issue, which is to be replaced, authorized an emergency fund of \$115,000,000 to expedite naval construction and provided \$35,000,000 for additional submarines.

In case of national emergency the President is authorized to suspend the eight-hour law on contract Government work.

To meet the shortage of naval officers, provision is made for graduation of two classes at the Naval Academy each year for five years, and to shorten the course from four to three years for that period. Under these provisions the cadet corps will be largely increased.

For an additional navy-yard at San Francisco there is an appropriation of \$1,500,000. Another Senate

amendment appropriates \$1,250,000 for a submarine base at New London, Conn.

Without discussion the Senate approved the action of the Naval Committee in eliminating from the naval bill the provision reaffirming it "to be the policy of the United States to adjust and settle its international disputes through mediation or arbitration, to the end that war may be honorably avoided."

This provision was put in the bill by minority leader Mann.

The largest previous naval appropriation was that of last year, amounting to \$312,888,060. Until the Civil War period the naval appropriations did not exceed \$12,000,000 to \$14,000,000, while the highest during that period was \$122,617,434, in 1865. After a sharp decrease to the old level, the appropriations again began to mount gradually, rising above \$50,000,000 at the time of the Spanish-American War. Beginning with 1904, they have been \$100,000,000 or above, except in 1907, when they were slightly less.

Southern Items in Naval Appropriation Bill.

Washington, D. C., March 5.—[Special.]—Specific appropriations for development in the South in the naval bill passed by the session of Congress just concluded include the following items:

At the Charleston Navy-yard—For the continuation of dredging operations, \$12,000; for toilet and locker facilities, \$8000.

For dredging Cooper River at the approach to the Charleston Navy-yard, \$175,000.

For repairs and improvement of machinery and implements at the navy-yard at Charleston, \$10,000.

At the Norfolk Navy-yard—Ventilating system, \$15,000; toilet and locker facilities, \$12,000; to complete 150-ton crane, \$265,000; drydock (limit of cost not exceeding \$3,500,000), \$500,000; for the repairs and improvement of machinery and implements at the navy-yard plant, \$35,000.

For repairs and construction at the naval station at New Orleans, to cover the damage done by the hurricane of September, 1915, \$150,000.

NITRATE PLANT SITES TO BE INSPECTED

Government Board Now Making Tour of South for Thorough Examination of Water-Powers Offered.

Washington, D. C., March 6.—[Special.]—The War Department has finally decided upon the use of the nitrate process, that will require great volumes of water-power. According to the statement of Secretary of War Baker, transmitted to the correspondent of the MANUFACTURERS RECORD, the only doubt of the Government was as to whether water-power development should be used or whether a more economical factor should be made available.

While the War Department has not specifically stated that the cyanamid process has been adopted, it is presumed that the Inter-Departmental Board has decided in favor of that process. This having been decided, or rather, the advisability of using a process requiring large volumes of water having been adopted, it only remains for the Government to select a site and proceed to the building of the dam and the nitrate plant and entering into a contract with the private interests which probably will operate it.

The Inter-Departmental Board, headed by Colonel Keller of the Corps of Engineers, will proceed at once to the investigation of sites. The itinerary of the trip of the board has been given to the MANUFACTURERS RECORD in full.

It had been expected that three of the members of the Cabinet would go with the board on the trip of inspection, but owing to the international situation it is prob-

able that they will send representatives. The itinerary of the board's trip is as follows:

ITINERARY, SOUTHERN TRIP, INTER-DEPARTMENTAL BOARD, MARCH, 1917.

Wednesday, March 7.

9.30 P. M.—Leave Washington—Seaboard Air Line.

Thursday, March 8.

11.35 A. M.—Arrive Columbia, S. C.

2.00-3.30 P. M.—Hearings at Chamber of Commerce, Columbia, to city interests claiming 33,844 continuous horse-power at four sites on the Broad, Saluda and Congaree rivers, all within 25 miles of Columbia; 22,000 continuous horse-power on the Savannah River within 90 miles of Columbia (Twin City and Calhoun Falls sites); 10,000 continuous horse-power on the Wateree River within 30 miles of Columbia; total 65,844 continuous horse-power. Also 146,000 developed water-power within 70 miles of Columbia, available in case of war, with transmission lines connecting up over 200,000 horse-power of hydraulic and steam electric plants.

3.30-5.00 P. M.—Hearings at Columbia to Savannah River interests claiming 30,000 continuous horse-power at Twin City and about the same amount Broad River site, both above Augusta and capable of operation as one installation or two. Claims are also made that there are advantageous sites on the Savannah River still further upstream in Elbert and Hart counties, Georgia, but amount of power possible not stated.

5.50 P. M.—Leave Columbia—Southern Railway.

9.10 P. M.—Arrive Augusta, Ga.

Friday, March 9.

12.50 A. M.—Leave Augusta—Georgia Railroad.

6.10 A. M.—Arrive Atlanta, Ga.

9.00-12 M.—Hearings at Atlanta (probably at Chamber of Commerce) to interests of Atlanta and vicinity claiming over 100,000 horse-power at sites on the Chattahoochee River between Atlanta and Columbus (stretch of about 110 miles). District Engineer Officer reports four dam sites within a stretch of 56 miles, extending upstream to a point about 74 miles north of Columbus and affording probably about 69,000 continuous horse-power. The district officer also reports that a site on the Tallapoosa River at Cherokee Bluffs can be tied in with the Chattahoochee sites to provide a total of over 100,000 continuous horse-power.

2.00-5.00 P. M.—Hearings at Atlanta to Rome and Cartersville interests claiming a large amount of power on the Coosa, Etowah and Tallapoosa rivers, and considerably more than 100,000 horse-power at the Etowah sites near Cartersville.

11.30 P. M.—Leave Atlanta—Southern Railway.

Saturday, March 10.

6.00 A. M.—Arrive Birmingham, Ala.

9.00-12.00 A. M.—Hearing at Birmingham (probably at Chamber of Commerce) to interests favoring Muscle Shoals, Tennessee River. Report of District Engineer Officer shows about 90,000 horse-power continuously available.

2.00-6.00 P. M.—Inspection by-product ovens.

7.00-10.00 P. M.—Hearings at Birmingham to Coosa River interests. District Engineer Officer shows over 100,000 horse-power continuously available if Etowah and Tallapoosa rivers are linked with the Coosa River sites.

Sunday, March 11.

7.00 A. M.—Leave Birmingham—Louisville & Nashville Railroad.

9.35 A. M.—Arrive Tuscaloosa, Ala.

10.00-12.00 M.—Hearings at Postoffice Building, Tuscaloosa, to Black Warrior River interests. District Engineer Officer shows that about 79,000 horse-power will be made continuously available by utilizing eleven sites on the section of the Black Warrior River and tributaries extending from Tuscaloosa to a point about 107 miles above. Estimated cost \$14,538,000.

3.05 P. M.—Leave Tuscaloosa—Louisville & Nashville Railroad.

5.30 P. M.—Arrive Birmingham.

8.55 P. M.—Leave Birmingham—Louisville & Nashville Railroad.

11.32 P. M.—Arrive Decatur, Ala.

Monday, March 12.

Government boat inspecting Muscle Shoals. (Car to go direct from Decatur to Sheffield, foot of Muscle Shoals, opposite Florence, by Southern Railway.)

Tuesday, March 13.

4.50 A. M.—Leave Sheffield, Ala.—Louisville & Nashville Railroad.

10.10 A. M.—Arrive Nashville, Tenn.

10.30-12.00 M.—Hearings at Hermitage Hotel, Nashville to Cumberland River interests claiming possibility of developing about 100,000 horse-power on the Cumberland River at Burnside and vicinity, about 326 miles by river above Nashville. District Engineer Officer reports that continuous power at that point would probably be very small.

12.15 P. M.—Leave Nashville—Louisville & Nashville Railroad.

6.55 P. M.—Arrive Louisville, Ky.

Wednesday, March 14.

9.00-12.00 M.—Hearings at Federal Building, Louisville, to Louisville and Jeffersonville interests claiming possibility of developing a large amount of power at Ohio River Falls.

District Engineer Officer shows that about 50,000 horse-power can probably be made available for ten months per annum, and that steam auxiliary will be required for the other two months.

1.10 P. M.—Leave Louisville—Louisville & Nashville Railroad.

4.35 P. M.—Arrive Cincinnati, Ohio.

8.55 P. M.—Leave Cincinnati—Baltimore & Ohio Railroad.

Thursday, March 15.

4.30 A. M.—Arrive at Wheeling, W. Va.

8.00-12.00 M.—Hearings at Federal Building, Wheeling to New River interests (ex-Secretary Garrison, et al.) claiming over 100,000 horse-power at sites on New River near Hinton, W. Va.

1.00-4.00 P. M.—Inspection of American Gas & Electric Co.'s steam generating plant (300,000 K. W.) at Beech Bottom, just above Wheeling, suggested by Industrial Agent of Pennsylvania Lines West of Pittsburgh.

Friday, March 16.

7.00 A. M.—Arrive Washington, D. C.

FIRST FRUITS OF ARMOR PLANT AGITATION.

How a Southern City Was Stirred to Go After Factories on the Showing Made in Compiling Facts for Armor Plate Board.

By EDWIN J. PAXTON, Editor the Paducah (Ky.) Sun. Will proper publicity sell a town to the manufacturers of the country as these same manufacturers sell their products to the consumer?

Paducah believes most firmly that it will, and Paducah should know, for it tried the scheme out and it worked very nicely indeed; tried it out, too, in Detroit, the mecca the past few years of many plants and men seeking employment.

Fired with enthusiasm over some very remarkable facts it developed in the preparation of its briefs to submit to the Naval Board in its petition for the location of the Government's armor plant in Paducah, the local Board of Trade conceived the idea of presenting these facts to the manufacturers of the country in an effort to bring new industries to the city.

Three members of the committee volunteered to pay their expenses to Detroit, launch a big newspaper advertising campaign and really test out what printer's ink, backed by a town with great things to offer manufacturers, would do.

The Detroit Free Press was used for five days—big copy on three days, and on the third day headquarters for inquiries and interviews were established at one of the hotels. The first day the Paducah boosters had all the callers they could handle, and the second and third days were almost as busy.

The net results? The first man to call had, inside of a week, visited Paducah and signed up for a plant which will have a payroll of \$250,000 a year after it is in operation a few months. In addition, 30 other leads were secured, most of them promising to visit the town, and almost every day since letters have been received from persons attracted by the advertising.

Not a bonus was offered anyone, and not one sought, and so well pleased is the Board of Trade that it now has in preparation a similar campaign in other cities, with, in addition, a big campaign in publications of national circulation.

Paducah, Ky., February 28.

Parkersburg Chamber of Commerce Given New Life.

[Special Dispatch to Manufacturers Record.]

Parkersburg, W. Va., March 6.

Parkersburg's Chamber of Commerce has been reorganized by the Town Development Co. of New York. It now has a strong business membership of 400 and a fund of \$30,000 to finance its activities for the next three years.

The stockholders met tonight and elected its board of directors, consisting of H. H. Dils, Wm. A. McKinney, J. A. Bee, Geo. O. Anderson, Jos. T. Callinan, E. M. Gilkeson, O. S. Hawkins, H. P. Camden, W. C. McCaughy, W. I. Boreman, Prof. F. M. Longanacker, Rev. H. S. Moore, C. A. Bukey, C. W. Dressell, J. B. Finley. The board will meet in a few days and elect its officers and a managing secretary.

The reorganized Chamber of Commerce represents the greatest union of business interests that Parkersburg has ever had.

O. S. HAWKINS.

Armor Plant Board Will Now Inspect Sites in the Ohio and Mississippi Valleys

REPORTS FROM CITIES VISITED IN LAST DAYS OF RECENT TRIP TO SOUTHERN PEOPLE THEMSELVES AROUSED BY DEMONSTRATIONS TO GREATER APPRECIATION OF THEIR RESOURCES AND OPPORTUNITIES.

[Special Correspondence Manufacturers Record.]

Washington, D. C., March 6.

The Armor Plant Board, which has just completed a trip through the South for the purpose of examining sites for the location of the Government armor-plate plant, today announced its itinerary for the second trip of inspection, which will include points not visited on its previous Southern trip, as well as proposed sites in the Middle West.

Although the three officers composing the board—Rear Admiral Fletcher, Commander Clark and Civil Engineer Bakenhus—would not make any specific statements regarding their first trip South, it is generally understood that their impression of the South's resources for the manufacture of armor plate for the navy is good. The board, it is intimated, was indeed somewhat surprised at the availability of Southern ores for this particular work, and it is believed that their second trip will serve further to substantiate the generally expressed opinion that the South is as well equipped in natural resources, transportation facilities and other factors as any other section of the country for the manufacture of armor plate.

The official announcement of the board's itinerary for the present trip through the South and the Central West was obtained today by the correspondent of the MANUFACTURERS RECORD, and is as follows:

"The Armor Plant Board expects to be in St. Louis, Mo., Monday and Tuesday, March 12 and 13, for the purpose of inspecting sites for the armor plant in the St. Louis district and for conducting hearings for those cities in the upper Mississippi River and lower Ohio River valleys which this board is unable to visit. It is proposed to have the hearings of the cities that cannot be visited on Tuesday morning, March 13, beginning at 9 A. M., at a place to be later designated. The board will leave St. Louis at 8.25 A. M. Wednesday.

"The board will arrive at Evansville, Ind., at 2.05 P. M. on Wednesday, 14, and leave on Thursday about 11 A. M. While in Evansville the representatives of Mt. Vernon will be given a hearing. The board will leave Evansville about 11 A. M. Thursday for Henderson, Ky., and will leave Henderson the same day at 3 P. M.

"The board will arrive at Louisville, Ky., Thursday, March 15, at 7.40 P. M., and leave on Friday at 6 P. M. While in Louisville the board will give a hearing to the representatives of New Albany and Jeffersonville.

"The board desires to confine its attention, as far as possible, to an examination of available sites, having particular regard to the character of the ground as to drainage, water supply, access to the main lines of railroads and transportation facilities from the site to the city. In addition, the board will make a limited investigation of the labor question, including the availability of labor now existing, the sources from which additional labor would be obtained, housing conditions and the prevailing rates of wages. Fairly complete data regarding the assembling of raw materials is already at hand.

The Armor Plant Board finds it impossible, within a reasonable time, to visit all of the cities that have interested themselves in the location of the Government armor plant. Cities in the lower Ohio and upper Mississippi valleys will be visited as follows:

"By Commander F. H. Clark, U. S. N., member of board: Paducah, Ky., and Metropolis, Ill., March 7; Cairo, Ill., March 8; Wickliffe, Ky., March 9; Cape Girardeau, March 9 or 10.

"By Civil Engineer R. E. Bakenhus, U. S. N., member of board: Keokuk, Iowa; Quincy, Ill., and Hannibal, Mo., March 9; Louisiana, Mo., March 10."

Tuscaloosa Presents Its Wealth of Resources and Advantages to the Board.

[Special Correspondence Manufacturers Record.]

Tuscaloosa, Ala., February 28.

"Birmingham plus the Warrior."

That, in a word, was the substance of Tuscaloosa's

strong bid for the Government armor plant when the special board of naval officers visited this city Monday, February 26.

Water for manufacturing purposes, water for bringing cheap river coal to the plant, water for conveying the finished product to the sea, water for hydro-electric power, water competition for railroads—this was what the board saw and heard as they made a trip on the Government steamer Nugent up the river from Tuscaloosa for a few miles, passing en route proposed sites for the armor plant.

In a comprehensive brief submitted by the Tuscaloosa Board of Trade, and in forceful arguments by President George H. Denny of the University of Alabama and Congressman W. B. Oliver, the members of the board were given a review of the resources of this district as they related to the manufacture of steel. On the authority of Dr. Eugene A. Smith, State geologist, the incomparable mineral wealth of the Tuscaloosa district was shown, and noted engineers and chemists were quoted in the arguments and in the brief in support of the ores and coals of the Alabama mineral district.

Tuscaloosa's unique position was pictured in the heart of a rich mineral district, successfully manufacturing iron and steel products, within the safety zone, and yet on a great river navigable the year round to the sea.

It was shown that at present the size of armor plate was limited by the size of railroad equipment, a limitation that would be removed by the location of a plant on a navigable waterway. The great saving which the navy had effected in the use of its colliers for the transportation of Chilean nitrate and other products was brought out, and a statement read from Paymaster McGowan of the navy in this connection. It was shown what could be accomplished by the barging of the armor plate from Tuscaloosa to the Gulf coast, hence to be transported by navy colliers or other vessels. The amazingly low water rates from this city to the Atlantic coast and through the Panama Canal to the Pacific coast were shown. President Denny in his address to the board called attention to the extent of the Gulf coast, which is as great as that of the Pacific, and on which shipbuilding should be developed.

If the members of the naval board were necessarily non-committal on the trip up the river, other distinguished visitors were admittedly impressed by the revelation which greeted them. Just a mile or two above Tuscaloosa the industrial suburb of Holt was passed. The beautiful broad water of the Warrior reflected the stacks of the furnaces of the Central Iron & Coal Co., the by-product plant of the Semet-Solvay Company, the big pipe plant of the Central Foundry Co. and other industries, while coal in self-propelled steel barges and in barges towed by steamboats came down the river. At Lock 12 a steel barge was under construction by the Government plant there. Along the route also could be seen projecting from the picturesque banks of this beautiful hill country tipples of coal mines, with automatic loading devices, pouring a continuous stream of coal into waiting barges. Lumber mills, rock quarries and other activities were noted along the banks. A packet boat going down the river with a cargo of naval stores, barges of coal and lumber and several launches were a part of the steadily-increasing traffic on the Warrior which has been developing since the river was opened a couple of years ago by the completion of the splendid system of locks and dams, the last of which was Lock 17, with its 63-foot lift.

In his argument at the hearing of the visiting board Monday evening in the Federal courtroom, President Denny stated that Tuscaloosa relied on the simple truths of the brief which it presented, and which he reviewed in part. Detailed technical information regarding the manufacture of armor plate in this district was included, and then the subject was treated from the several angles which the board had suggested.

As to living conditions, attention was called to the report of the Federal health service, which a year ago

completed a health survey of this county, as a model demonstration to the State. This report refers to Tuscaloosa as a 100 per cent. city in the matter of sanitation, water supply, health supervision, etc.

The splendid public utilities—water-power electricity, 90-cent gas, a modern electric-car system, with a proposed interurban line to Birmingham, 56 miles distant—were mentioned. The educational facilities, with a superb system of public schools, several private institutions and the University of Alabama, were declared by Mr. Denny to be a strong attraction to the skilled laborer of the present day, who demands the best education for his children.

President Denny was followed by Representative Oliver of Alabama, a member of the Naval Committee of the House, who has made a thorough study of the subject of the Government's manufacture of armor plate. Mr. Oliver, briefly but most impressively, called attention to the possibilities of water-power development in this section. A telegram had been previously read from the Alabama Power Co. to the effect that their testimony at the hearing at Birmingham was equally applicable to Tuscaloosa. This showed the availability of the present commercial supply, but Mr. Oliver emphasized the opportunity of the development of power by the Government from Lock 17, Government-owned and controlled, where Government engineers had already determined that a minimum of 57,000 horse-power could be developed. He also pointed out the cheap steam power developed in this district from river coal, and called attention to the practically unlimited extent of the Warrior coal fields. No one, however, could foretell, he declared, the price of coal 25 years hence, and from a conservation viewpoint he urged the alternative of water-power.

As to the Southern ores, the report of Professor Richards of Lehigh was cited. The fact that steel was being made in this district meeting the analysis specified in the matter of phosphorus content was brought out, and Germany's experience as well as that of other nations was referred to in commenting on the manufacture of steel from Bessemer and basic pig. Mr. Oliver stated that Congress in passing the armor-plant appropriation contemplated the use of other ore fields than the Lake Superior region, which is in the danger zone.

After a day and a night in this city the board left Tuesday morning for Gadsden in a private car which had been provided by the Tuscaloosa Board of Trade.

SAM F. CLABAUGH.

Gadsden Shows Board That Low-Phosphorus Steel Is Being Made Now Without Special Effort.

Gadsden, Ala., March 3.

Editor *Manufacturers Record*:

"If called upon, the Gulf States Steel Co. could manufacture steel of the desired analysis with its present force and equipment," was the assurance given the Government Armor Plant Board by Mr. C. A. Moffett, vice-president and general manager of the Gulf States Steel Co., in Gadsden. Mr. Moffett further asserted that this steel could be produced at the plant here without material change in their practice and without materially increasing their present cost, except as to the addition of certain alloys. "We do not use ferrochrome or nickel," stated Mr. Moffett, "but in all other respects we are now making steel of substantially the same analysis as that which the Government will require."

The results obtained by the Gulf States Steel Co. should dispel all doubt as to the manufacture of low-phosphorus steel in Alabama. For example, during the past January this company produced 18,748 tons of steel, of which 70 per cent. contained phosphorus as low as .03 and under, while 28 per cent. contained phosphorus as low as .02 and under. This low-phosphorus steel was made without special effort, it being shown that the company is often compelled to rephosphorize its steel when working to specifications requiring .05 phosphorus. The board was told by local steel men that reducing phosphorus to any point desired is both simple and easy.

At Gadsden the board was afforded the opportunity of seeing the manufacture of steel and of spending the day in company with practical steelmakers. The board was met by a committee from the Gadsden Chamber of Commerce and taken at once to the plant of the Gulf

States Steel Co. Here they were joined by Messrs. C. A. Moffett, vice-president and general manager; A. L. Conner, general manager of works; R. R. Luckie, superintendent of open-hearth, and M. C. Shannon, chief chemist. Beginning at the by-product plant, where 37 by-product ovens are nearing completion, the board was shown every process in the manufacture of steel from the iron ore to the finished product of billets, rods, wire, fencing, nails, barbed wire, staples, hay ties, etc. Like all visitors to the works of the Gulf States Steel Co., the board was impressed with the magnitude and efficiency of this plant. Manufacturing over 600 tons of steel a day, it has not ceased operations for more than seven years, and has been consistently profitable, in spite of dull seasons, throughout that period.

Immediately following the inspection of the plant a conference was held in the offices of the company, at which time Mr. Moffett made the statements quoted above, and several important questions relating to steel-making in Alabama were discussed. The board was told that little difficulty would be encountered in utilizing armor-plate scrap here by the same process now followed by armor manufacturers.

Several attractive sites were shown the board along the Coosa-Alabama River, near the iron furnaces of the Alabama Company and in the vicinity of the auxiliary steam plant of the Alabama Power Co. These sites have good railroad facilities, good foundations for heavy machinery, are in easy reach of abundant water supply, and would require but little grading. The trip about the city was concluded with a visit to Noccalula Falls and to the top of Lookout Mountain, where the board was afforded a splendid view of the entire valley.

During the course of the day members of the local committee went thoroughly into the questions of transportation, health, climate, labor supply, composition of population, hydro-electric power, and, in fact, covered the whole range of subjects of special interest to the board. After lunch at the Hotel Printup, a brief hearing was held in the hotel parlors and the board was given analyses of basic pig-iron, basic open-hearth steel, certified physical tests, characteristic analyses of raw materials, freight rates and other information in connection with the manufacture of iron and steel in this city.

Possessing an unlimited supply of all principal raw materials, and having demonstrated that such steel as the Government will require can be successfully and economically produced in this city, the citizens of Gadsden are confident their claims will be given every consideration by the Armor Plant Board.

EARL LAY, Secretary,
Gadsden Chamber of Commerce.

Rome (Ga.) Visited by the United States Armor Plant Board.

Rome, Ga., March 2.

Editor *Manufacturers Record*:

On Wednesday, February 28, the Armor Plant Board, accompanied by a committee of the Rome Chamber of Commerce, visited several sites around Rome regarded as suitable for the plant's location.

The data regarding these sites had been carefully prepared as to drainage, water supply, transportation, trackage facilities, etc. Options had been secured on all the properties shown, and the sites were platted in a thoroughly comprehensive manner.

The board expressed itself as highly pleased with this feature of the proceedings, and stated that all of the sites shown filled the requirements for the purpose intended.

The board afterwards met in the commissioners' room of the city hall, where Rome's claims for the location of this great industry were formally presented.

Experts were called upon to establish the occurrence and tonnage of ores in this locality, furnace practice, metallurgy, etc. These facts were presented by Dr. McCallie, State geologist; F. R. Maddox and Y. A. Dyer.

Power rates and available horse-power were presented by Mr. Rawson Collier of the Georgia Railway & Power Co.

A formal offer to build all the houses necessary for taking care of the employees of the plant and their families, and certified to by the presidents of the five banks here, was presented by Mr. John M. Graham, the president of the National City Bank.

In addition to information as to water-power and mineral resources which was presented, it was shown that Rome's location as halfway between the Alabama and Tennessee coal fields had the advantage of the resources of both of these fields available, and when there was labor troubles or car shortage in one district that the other was available to draw from.

Dr. McCord, health commissioner of the county, presented the result of the sanitary survey conducted last year by the United States Public Health Service. This showed the health and sanitary conditions of Floyd county to be in splendid condition.

State Labor Commissioner Stanley presented facts as to the availability of assembling skilled labor at Rome without difficulty.

A map was shown with Rome in the center of a circle, having a radius of 75 miles, and it was pointed out that within the area of this circle there is a greater variety of natural resources existing in enormous commercial quantities than in any section of the United States.

The Red or Clinton ores shown within this area will aggregate more than 1,000,000,000 tons.

The brown ores within the same area will aggregate 150,000,000 tons.

The coal within this area is estimated at from 600,000,000 to 1,000,000,000 tons.

The tonnage of manganese has not been accurately determined. However, more than 1,000,000 tons of manganese exist on one property alone in this section near Cartersville.

More than 20,000,000 pounds of copper were produced at Copper Hill last year, located 70 miles from Rome.

At the same place two sulphuric-acid plants are operated by the Ducktown Sulphur, Copper & Iron Co. and the Tennessee Copper Co., that have a capacity of 450 tons of sulphuric acid per day.

Within the area of the circle described there is approximately 200,000 hydro-electric horse-power available that may be developed at a cost of \$104 per horse-power.

The aluminum ores in and around Rome have made it possible for the Aluminum Company of America to control this industry throughout the world. Approximately 1,000,000 tons of this ore has been mined and shipped from this territory, and there is no question as to an enormous amount of it being available for future use.

Limestone and dolomite are inexhaustible.

The phosphate rock of Tennessee is distant 100 miles. The phosphate beds of Florida are easy of access.

Within the circle described there is a total of 1900 miles of railroad main lines.

These railroads lead to the mineral deposits and to the furnaces in this section, that will insure either the assembling of ore or of pig-iron, or of steel, from the various plants throughout this territory under any and all conditions.

Rome is located within 150 miles of the coastal plain, and yet is so protected by the surrounding mountains that it seems as if nature itself had designed this city for the location of a great industry, such as the making of armor plate, projectiles or munitions, and offering such security as regards location that the nation could feel absolutely sure that the plant at Rome could be operated without interruptions so far as its military security was concerned.

The members of the board made a splendid impression on the citizens of Rome by their thoroughly democratic manner and their apparent interest in this section of the United States.

To Manufacture Coke and By-Products.

The manufacture of coke and by-products is proposed by the Monongahela Valley Traction Co. of Fairmont, W. Va., and E. B. Moore, general manager, sends the MANUFACTURERS RECORD an outline of the plans. This company expects to build a by-product coke-oven plant and possibly some producer plants for the utilization of coke from the by-products ovens. Details have not as yet been definitely determined, but are in charge of Sanderson & Porter, engineers, New York, who are preparing a report with definite recommendations. Unconfirmed reports have stated that the company will invest \$1,000,000 for these facilities.

Irvine Oil Field of Kentucky Attracting Wide Interest Among Operators

[Special Correspondence Manufacturers Record.]

Irvine, Ky., March 5.

This new Kentucky oil field is attracting operators from all other fields, including Pennsylvania, West Virginia and Oklahoma, and those of the country generally. Investments in this territory, especially in the Estill county field immediately surrounding this city, are considered a better proposition than at any time since oil was first discovered, about 16 months ago. Practically the whole of the area of the county has been developed to such an extent that experienced operators believe the territory is rich in oil, and is destined to become one of the leading oil-producing sections of the United States. At this time thousands of new leases are being made, and the driving of new wells is going on uninterruptedly, although weather conditions and the almost impassable condition of the public roads are notable barriers to activity in operations. Leases are being extended into the adjoining counties of Clark, Powell, Bath, Rowan and Wolfe, while in the headwaters of both the Kentucky and Middle Fork rivers, in Breathitt, Perry, Harlan, Leslie and Knott, many leases are being taken and active preparations are under way for the beginning of drilling test wells upon the opening of good weather in the spring. Already some rich strikes have been made in Bath, Wolfe and Powell counties, and the construction of pipe lines goes steadily on. From the Wolfe county district pipe lines have been lately completed into the field-around Irvine.

In Letcher and Perry counties, on the Kentucky River headwaters, the Kentucky Producers Co., composed of Tennessee oil people, is leasing large blocks of oil lands, and promises many test wells to start by April 1. In that section oil is said to be plentiful, based on tests already made. Gas has also been struck at a number of points at a shallow depth.

Among new companies organized for development are Success Oil & Gas Co., Louisville; Dulin Oil Co., Lexington; the Kentucky-Clarke Oil Co., Lexington; Russell Oil Co., Louisville; Delta Oil Co., Bowling Green, and others. Leases are being obtained by the new companies, and drilling will soon be in progress. Within the past 60 days the total production has made a good increase in the Estill field, despite severe weather conditions a greater part of the time. The opening of new territories and extensions has improved investment conditions to a marked extent, investments having trebled in value within the past few months. Small landowners in Estill county have become wealthy upon the premium paid them by the operators. In some instances, however, the operators purchased from landholders outright.

Arrangements have just been made for this city to have a tankage farm capable of storing more than 1,500,000 barrels, the tanks to be erected by the Mid-Continent Oil Co., an Oklahoma corporation of which Harry Sinclair is at the head. Thirty 55,000-barrel tanks will be erected here. Some of them are already en route, and it is said that actual construction will be started within 30 days.

A deal is being made for an 150-acre farm just on the outskirts of the city for the site of the tanks. The cost of the erection of these tanks and the pipe lines that will necessarily run from different points in the field will be more than \$2,500,000. A plant is destined here by which the finer grades of oil can be separated from the inferior grade, and the better oil will be shipped by rail to either Louisville or Cincinnati, where a large refinery is to be built.

The main offices of the company will be in Irvine, while a branch office will be maintained in Winchester, where a large number of oil operators have their residence. The Sinclair interests have been looking over the Irvine field for some time, and rumors have been current that this interest would build a 10,000-barrel refinery here. The company has arranged to take 7000 barrels daily from Irvine producers, with an option to buy large properties as soon as the production is ascertained.

The entrance of these interests into the field and the erection of upward of a million and a half of storage will mean greatly increased operations during the spring and summer months.

Since the beginning of developments in the oil fields of this section Irvine has grown from a sleepy old town to a hustling, busy-bustling city of between 5000 and 6000 population.

Announcement has just been made here that Gaines, Marcum & Neeley will construct a pipe line from West Irvine to the Station Camp oil district, 10 miles east of here, and will erect a large storage tank here to cost from \$75,000 to \$100,000. The operators are arranging to ship their output in tank cars direct to refineries in Cincinnati and Louisville.

In the Station Camp district the shallowest oil well in the world was drilled a few days ago by Hervey & Lloyd on the Allen Powell farm, striking a rich flow at 79 feet and 4 inches. It is believed the well will average 400 barrels daily. A rush is now being made upon properties of that section, every available acre being leased. In some instances oil lands are being purchased outright at record-breaking prices. In one instance a poor farmer owning 50 acres, about one-third level, offered his holdings six months ago for \$800. He sold a few days ago for \$20,000 cash. There are three large producing wells on his place. During the week some good strikes have been made in the Miller's Creek valley.

The Omar Oil & Gas Co. of Pittsburgh, Pa., has just taken over 20,000 acres of lands in Pike county, on the Big Sandy River, and proposes the installation of machinery within 30 days and the drilling of many test wells. This is new territory, entirely undeveloped; however, oil has been found in the Beaver Creek section of Floyd county and the Warfield section of Martin county, immediately surrounding, and it is believed some productive territory will be developed by the Pittsburgh operators. Other holdings are being rapidly taken over and preparations made for active drilling work upon the improved weather conditions.

Broadening Interest in Oil Prospecting in Kentucky.

Jackson, Ky., March 1—[Special.]—The oil development activity in Kentucky is steadily taking in new fields, and Breathitt county, like its neighboring counties, has taken on the oil and gas fever, and already leases are being sought on promising lands for development this spring. The Crescent Oil Co. of Columbus, O., and other Ohio, Oklahoma and Pennsylvania oil concerns have representatives on the ground making observations and taking leases. One leading Oklahoma oil expert, who has just completed a survey of the ground in Breathitt county, stated that Breathitt county looks exceedingly promising. Over 20,000 acres of Breathitt lands are now under lease, and the Crescent Oil Co. has ordered machinery for drilling. The W. D. Back farm, near Jackson, will be the first scene of operations.

Pulaski county, like Breathitt, is the scene of activity for early spring oil operations. Contracts have been let for two wells in the eastern part of the county, and others are pending. During the past few weeks many oil men have been in the county trying to get leases, but most all the land already has been taken. Oil men say this section seems to be favorable for "wildcatting." Pulaski county lies immediately northwest of Wayne county, a producing oil field for the past 20 years, and is directly on a northwest-southwest line from the oil fields of Estill county to those of Wayne county. In every well drilled in Pulaski county there has been either a "gasser" or oil in some quantity found in the first or top sand.

One or two wells found in Pulaski were estimated at from 10 to 25 barrels a day, and were considered a failure at a time when oil was less than 60 cents and no pipeline facilities. With oil now around \$2.18 and the Cumberland Pipe Line running directly through the county, these operations would be profitable, even with only the first or top sand touched, at a depth of from 500 to 800 feet. In all there have been as many as 12 wells drilled in Pulaski county, scattered widely over the territory.

NEW OIL FIELD IN LOUISIANA.

Active Drilling in New Iberia Parish With Flow of Oil from Test Wells Shown.

Regarding the development of the new oil field in Louisiana, Mr. Fred W. Bauman, assistant secretary of the Little Bayou Oil Co., Inc., writes the MANUFACTURERS RECORD from New Iberia, La., to the following effect:

"During August, 1916, paraffin dirt was noticed on the east side of the Bayou Teche in this (Iberia) parish, about five miles east of the city of New Iberia and one mile from the Bayou Teche on a blind bayou called 'Little Bayou.'

"Leases were acquired by Messrs. George J. Sabatier, Walter J. Burke and Solange E. Sorrel jointly, all residents of this parish, on about 5000 acres immediately surrounding the oil indications.

"During November and December, 1916, these three gentlemen subleased a portion of their holdings to the Gulf Refining Co. of Louisiana and to the newly-formed local company organized under the name of 'New Iberia Oil Co., Inc.'

"During December, 1916, both of the said companies (Gulf Refining Co. and the New Iberia Oil Co., Inc.) commenced drilling. The Gulf Refining Co. struck oil at about 1200 feet, made a test and concluded to drill deeper in the same hole, which they are at present doing. The New Iberia Oil Co., Inc., made a test at 1071 feet and is producing under pump 80 barrels of oil per day, this oil being of 24 gravity.

"Much interest is being shown in this brand-new field, and the following companies have acquired in fee and by lease and sublease, to wit: The Producers' Oil Co., the Gulf Refining Co. of Louisiana, the Sun Company, Mr. H. T. Staiti, and others.

"The 'Little Bayou Oil Co., Inc.' is the holding company, the stockholders thereof being the above-named three original lessees of the 5000 acres. So far, they are not operating."

Experimental Mill Proposed for Making Paper Pulp from Cotton Stalks.

Dallas, Tex., March 3—[Special.]—In connection with the movement to establish a pulp mill and paper-manufacturing plant in Texas for the purpose of utilizing cotton stalks as the raw material, the latest conference on the projected enterprise was held a few days ago at Dallas. It was attended by M. W. Marsden and R. Daetwyler of Philadelphia, who represented the owners of a patent for converting cotton stalks into pulp. Those present at the meeting were J. A. Kemp of Wichita Falls, one of the wealthiest manufacturers of Texas, who is interested in various other enterprises of much magnitude; Alexander Sanger, wealthy wholesale merchant; C. W. Hobson, head of large electrical enterprises; W. H. Wolf, Lewis Lipsitz, R. H. Stewart, Royal A. Ferris, Herbert M. Hughes and John R. Babcock, all of Dallas, and Wilhelm Wehe of Austin, cotton expert of the State Agricultural Department. The Dallas men who attended the conference represented wealth aggregating many millions of dollars.

The possibilities of the new industry were thoroughly discussed with a view to determining its practicability from a business standpoint. The conclusion seemed to be reached by those present that at least an experimental mill should be established, and the advantages of Dallas as the center of a great cotton-producing section for the location of the proposed industry were pointed out. Mr. Kemp is interested in a new invention which has been patented that enables the harvesting of cotton by the thrashing method, and it is claimed that this machine will be specially valuable when operated in conjunction with the utilization of the cotton stalks for the manufacture of paper pulp.

Canton (Miss.) Wants Commercial Secretary.

D. M. PERLINSKY, Secretary Pro Tem. Board of Trade, Canton, Miss.

The business men of this city are perfecting plans for the organization of a Board of Trade, and will require the services of a competent, energetic and intelligent secretary. We shall be grateful for the use of your columns for a statement that we are seeking the services of a man of this character.

Oklahoma Oil Production for Past Year Reached Nearly \$133,000,000 in Value

[Special Correspondence Manufacturers Record.]

Tulsa, Okla., March 3.

Oklahoma saw its greatest crude-oil year in 1916, when the total value of the production amounted to \$132,737,800. No other crop of any kind has ever yielded such a handsome total within a year's time in this State. The total production for 1916 was 106,190,240 barrels, or 11,720,204 barrels less than the 1915 production, which was 117,910,444 barrels. But in dollars and cents the 1916 production was worth more than that of the previous year. And all indications are that the 1917 oil crop will exceed all former records in cash value.

The price of crude oil during the past year reached its highest mark in the history of the industry in this State or in the Mid-Continent field, \$1.75 a barrel. The year of 1916 started with oil at \$1.55, but the new production in the Kansas field, together with the flush oil in the Shamrock field of Oklahoma, had the effect of cutting the price down to 90 cents a barrel during the first half of the year. Gradually, soon afterward, the price began to ascend, going to \$1.75 per barrel by January 1. And that is not really the price at the present time; it is simply the market quotation, for, in fact, there are very few barrels of crude that are selling now at less than \$2 per barrel, and in many instances as high as \$2.50 is the figure paid. Oil men generally predict that before 1917 expires the market quotation will be at least \$2.50. An average price of crude for the past year would be easily \$1.25 a barrel, and it is on that basis that the value of the 1916 production is figured.

An interesting feature of the 1916 oil year also was the vast amount of crude stored in the Mid-Continent field during the 12 months, a total of 86,094,756 barrels, which at the present time has a monetary value of \$172,189,512, or \$40,000,000 in excess of the value of the oil produced in this State during 1916. The actual value of the stored oil now is \$2 a barrel, whereas the average value of the oil produced during the year was \$1.25 a barrel. The total amount of oil now stored is within 20,000,000 barrels of all that was produced in Oklahoma during 1916, and it amounts to a little more than one-third of all the oil produced in the entire United States in 1916, a total of 303,495,292 barrels. The Prairie Oil & Gas Co. is by far the greatest holder of crude oil in this field, 39,250,000 barrels, or within 8,000,000 barrels of being one-half of all the oil stored.

Although the past year showed a decrease in the amount of new production in this State, there was a great increase in the amount of work completed. The production decline was caused by the falling off of the great Cushing field, which had reached its zenith during the year previous. There were 7700 oil wells completed the past year, with a new production that amounted to 518,888 barrels; also 359 gas wells and 1136 dry holes. There were 3007 more producing wells completed in 1916 than in 1915, but the 1916 new production fell off 515,812 barrels. Also there were 290 more dry holes drilled in 1916 and nine more gas wells. In the fields of the United States and Mexico there were 11,369 wells completed during the past year, as against 5693 the previous year. The new production of 1916 amounted to 769,155 barrels. Oklahoma, with 7700 wells completed and with 518,888 barrels of new production, easily took the lead. Oklahoma also won first place in the oil production industry in 1915.

According to official reports, there were 1226 wells drilling in Oklahoma oil fields on February 1, 1917, and 228 other rigs up, preparatory to drilling, making a total of 1514. During the month of January, this year, there were 403 holes completed, of which 325 produced oil, 30 were gassers and 48 were "dusters." The total new oil production for the month amounted to 22,823 barrels. The present daily production of crude oil in this State is 254,000 barrels, with a monetary value of \$500,000.

The coming year, if present plans and contracts are carried out, will be the banner in pipe line building, for official reports show that in the Mid-Continent field alone the program calls for the laying of an average of five miles daily of trunk lines for the whole year. This

is an investment of more than \$12,000,000 in transportation facilities alone. The program includes the important lines of the Sinclair company from Cushing to Chicago, which will be 800 miles long; the Roxanna Petroleum Co., from Oklahoma to St. Louis; the Prairie Pipe Line Co., looping and doubling main lines from Kansas to Woodriver, Ill.; the Pierce Oil Corporation, from the Healdton field in Southern Oklahoma to Fort Worth, Tex., while the main lines of the Kansas Natural Gas Co. are to be relaid from Oklahoma and Kansas points to Kansas City and St. Joseph, Mo. The Roxanna and Kansas Natural lines will each be more than 450 miles in length. The oil lines will be of 8-inch pipe and the gas line of 16-inch.

The refining and gasoline-making ends of the oil industry also reached their zenith in Oklahoma and the Mid-Continent field during the past year. An official report shows that there are more active refineries in the Mid-Continent than in any other one field in the United States. Oklahoma has 41 oil refineries, Kansas 21 and Missouri 3, while there are three on the Illinois side of the river at St. Louis. These 68 refineries represent an investment of approximately \$30,000,000. Oklahoma has 10 refineries at the present time, each of which is using 10,000 barrels of crude oil daily. Several of these were completed during the past year.

The casinghead gasoline industry, the manufacture of gasoline from gas, has grown to such an extent that, according to W. P. Donovan of the gasoline department of the Gypsy Oil Co., by the beginning of this spring the production of casinghead gasoline in the Mid-Continent field will excel the gasoline production of the refineries. Oklahoma alone at the present time, he says, is making 5,500,000 gallons a month. In 1915 the entire production of casinghead gasoline in the United States was less than 65,000,000 gallons, of which Oklahoma produced but 35,000,000 gallons. According to Secretary Pfister of the Oklahoma Casinghead Gasoline Association, the total output of Oklahoma for 1916 would amount to 61,000,000 gallons. A recent report of the Interior Department declares that the investigations of the department included an absorption process of extracting gasoline from natural gas, which if generally applied will make possible the recovery of 100,000,000 gallons of gasoline from natural gas each year.

Estimates made on the natural gas production of Oklahoma, when 1916 closed, placed the total amount at 3,000,000,000 cubic feet daily, with only about 315,000,000 cubic feet being consumed daily. The Dilworth district of the Kay county field in Northern Oklahoma is making 500,000,000 cubic feet daily at the present time, and the credit is claimed for it of being the greatest natural gas producing area in the United States. It is estimated that the total gas production of Oklahoma for 1916 broke all previous records, and never before in the history of the industry has there been such a demand for natural gas. The estimated value of all gas produced during 1916 in the United States is placed at \$115,000,000. In this State conservation methods employed have saved from waste 2,000,000,000 cubic feet of gas, according to the State Corporation Commission, which has conservation jurisdiction.

The total losses from fire to oil-field property in Oklahoma during 1916 aggregated more than \$4,000,000, according to the best figures obtainable. In a majority of cases the fire was caused by lightning. There were 138 storage tanks of all sizes destroyed by fire, including 27 of the 55,000-barrel steel tanks. As nearly as can be estimated, there were 1,535,000 barrels of oil destroyed by fire, the loss of oil alone amounting to \$1,918,750.

Much of the land on which oil and gas are produced in Oklahoma belongs to the Indian citizens of the State, principally Cherokees, Creeks and Osages. This means an untold wealth to these people. During the past three years the oil leases on the lands of restricted Indians (those whose business affairs are looked after by the Government) brought to the red men a total of \$5,563,000 in royalties.

In recent years, too, the school lands, owned by the State, and other State lands have been leased for oil

and gas to such an extent that the annual income to the State from that source is more than \$1,000,000.

Oil and gas will be produced in paying quantities in Oklahoma for 50 years, according to Charles N. Gould, dean of recognized geologists in this State. He estimated recently in an address that from one-half to two-thirds of the oil territory of Oklahoma has been discovered, with one-third of the oil taken from the ground. Other oil experts give Oklahoma 75 years of oil and gas life. It is admitted by all oil men that this State has the greatest untested oil area within a defined oil belt, with the possible exception of Kansas, and all the prospects are that Oklahoma will make a better showing in the present year. Oil men generally predict the highest oil prices during 1917 that have ever been known.

An interesting feature of the 1916 oil year in the United States was the new export record of oil, of which Oklahoma furnished the greatest amount. The exports of mineral oils reached 2,583,037,822 gallons, valued at \$199,530,471, as against 2,309,760,792 gallons in 1915, valued at \$141,004,663. C. M. SARCHET.

Large Bond Issue for Benefit of North Carolina's Educational Institutions.

Raleigh, N. C., March 5.—[Special.]—North Carolina took a long step forward today, the Legislature almost unanimously voting \$3,075,000 of bonds to permanently enlarge the State's educational and charitable institutions, now inadequate to meet the demands. The bonds are to be issued within six years, beginning this year, \$500,000 each year, at 4 per cent. interest, and will be due and payable in sums of \$100,000 beginning July 1, 1923, and on the 1st of July of each year afterwards until all the series is paid. The bonds will be absolutely exempt from all State, county or municipal taxation or assessment, direct or indirect, on principal or interest.

The proceeds of the sale are to be applied as follows, exclusively for permanent improvements: State Hospital for Insane and Epileptics at Raleigh, \$200,000; State Hospital for the Insane, at Morgantown, \$200,000; State Hospital for Colored Insane and Epileptics, at Goldsboro, \$125,000; State School for Deaf Mutes, at Morgantown, \$60,000; Stonewall Jackson Training School for Boys, at Concord, \$60,000; University of North Carolina, at Chapel Hill, \$500,000; State Tuberculosis Sanitarium, at Montrose, \$150,000; State School for the Feeble-Minded, at Kinston, \$75,000; East Carolina Training School, at Greenville, \$200,000; Appalachian Training School, at Boone, \$50,000; Culowhee Normal and Industrial School, at Culowhee, \$40,000; College of Agriculture and Engineering, at Raleigh, \$300,000; State Normal and Industrial College, at Greensboro, \$500,000; Negro Agricultural and Technical School, at Greensboro, \$25,000; State Normal Schools for Negroes, at Winston-Salem, Fayetteville and Elizabeth City, \$10,000; State Board of Education, to aid in building public schoolhouses, \$500,000; for a State storage warehouse at Raleigh, for public documents, printing materials, etc., \$50,000; for the installation of approved apparatus for the protection of State institutions against fire, \$40,000.

Under the terms of this important act Governor Bickett is directed to appoint a State Building Commission of five members, three Democrats and two Republicans, and the commission is given authority, in case it finds the buildings now occupied by the State School for the White Blind, at Raleigh, to be unfit for this use, to remove this institution to a site in the suburbs of Raleigh now owned by the State, and where it is proposed to install what is known as the cottage system for the care of these wards of North Carolina.

The Cotton Movement.

According to the report of Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, the amount of cotton brought into sight during the first seven months of the season was 10,805,707 bales, an increase over the same period last year of 781,251 bales. The exports were 4,072,102 bales, an increase of 537,444 bales. The takings were, by Northern spinners, 1,915,379 bales, a decrease of 240,247 bales; by Southern spinners, 3,369,349 bales, an increase of 451,656 bales.

Giant Power Plant Constructed at Mouth of the Coal Mine

200,000 K.W. STEAM-ELECTRIC STATION NEAR WHEELING A FULFILLMENT OF PROPHECY THAT GENERATING PLANTS WOULD GO TO THE COAL—WIDE TERRITORY TO BE SERVED WITH LIGHT AND POWER BY IMMENSE NEW PLANT.

[Special Correspondence Manufacturers Record.]

Wheeling, W. Va., March 1.

By July 1 the great new plant of the American Gas & Electric Co. at Windsor, W. Va., 10 miles north of Wheeling, on the Ohio River, will be near enough completion to be operated in part, and a few months later it will be running at full capacity, furnishing light and power to a great and thriving territory in West Virginia and Eastern Ohio.

The completion of this enterprise will be in fulfillment of Edison's prediction that the power generating stations of the future would be located at the coal mines, from which electrical energy would be transmitted at very high voltages for tremendous distances and power would be so cheap because of the high efficiency of steam and electrical generating apparatus that factories and

the ideal conditions. Working through the local subsidiary, the Wheeling Electric Co., John B. Garden, manager, the big corporation acquired the land at a reasonable figure, prepared plans for a station many times greater than the Wheeling plant and began work with the energy and enterprise characteristic of its rise to a foremost place in the electrical world.

Sargent & Lundy, engineers of Chicago, designed the plant, and the Foundation Company of New York secured the contract for the work, which will involve several million dollars. B. Diem, a master mechanical and electrical engineer of New York, was put in charge as superintendent of construction.

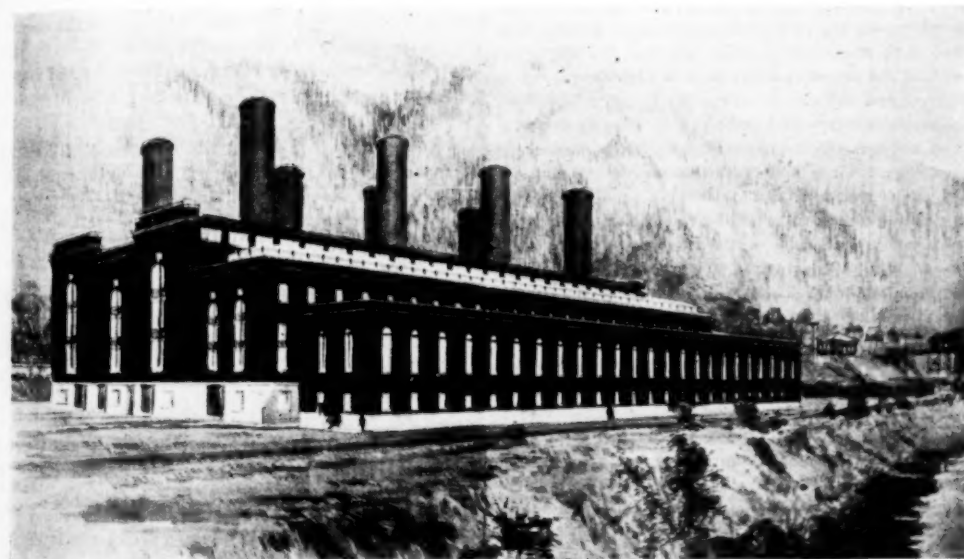
The present installation will consist of the following:

Four General Electric Co. 30,000 K. V. A. 3-phase,

power for the plant auxiliaries, and from which bus there are emergency connections for all unit auxiliaries. The same idea was followed in the exciter layout. Each unit exciter is connected to the "exciter" bus, so that the generator fields may be fed either from the direct-connected unit or from the bus. A reserve 150-kilowatt motor-driven exciter is also connected to the "exciter" bus. In this way a very flexible design has been arranged for and reliability of service insured.

All 66,000 and 132,000-volt switching apparatus and transformers are placed outdoors and are arranged in two separate switchyards. These switching stations have been designed with a view to flexibility, so that a feeder can be fed direct from the transformer banks or from high-tension bus. All high-tension feeders cross the Ohio River overhead, the two 132,000-volt feeders going direct to Canton as trunk lines, while the 66,000-volt feeders tie into and form part of the existing network on the Ohio side.

The American Gas & Electric Co., through its local subsidiary, now serves Wheeling and the nearby towns of Warwood, Benwood and Moundsville, in West Virginia, and the Ohio towns of Bridgeport, Bellaire, Barnesville, Shadyside, Tiltonville, Yorkville, Neffs, Rayland, Dillonvale, Mt. Pleasant and Adena, and it is proposed with the completion of the new plant to extend this territory in every direction, as far west as Canton and as far north as Pittsburgh. That it will contribute greatly to Wheeling's progress there is no doubt, and the city has cause for congratulation in being the center of this great plant, the last word in electrical development in the United States. ROY B. NAYLOR.



WINDSOR POWER STATION, WINDSOR, W. VA. CAPACITY 200,000 K. W.
Width, 275 ft. Total length, 300 ft. Height, 105 ft. Under ground, 64 ft.

mills now operating isolated plants could well afford to scrap their equipment and buy their power. The new plant is in a great region of Pittsburgh vein coal, with a mine practically at its doors and the ideal water conditions also present, make a combination most favorable to the realization of Mr. Edison's dream of low cost power for industrial purposes.

Ground was broken on the enterprise over a year ago, and it has been rapidly pushed by the men in charge, the work going on day and night. The place was changed in a jiffy from a cornfield into a veritable hive of industry. From the beginning there has been an almost endless amount of work, putting in the various foundations, the intake and discharge tunnel outlets, condenser pit, etc., and it is work that requires high engineering skill. Sand and gravel available from the river simplified the concrete problem, and a miniature railroad with dinky engines aided the handling of materials promptly and quickly. The scene at Windsor the past year, with the little railroad, steamer, derrick boats, pump boat, sand digger, hoists, pile drivers, concrete mixers, etc., has reminded one of a section of the Panama Canal zone in its busiest days.

The American Gas & Electric Co. decided upon the construction of the plant at Windsor only after very careful consideration. A few years previous they had built at Wheeling a splendid power station, which it was thought would take care of the expanding demands for a long time, but such was the growth of business in this favored industrial region that the new plant was found necessary, and on thorough investigation of the site at Windsor, comprising about 75 acres, the requisites pointed out by Mr. Edison was found to possess

60-cycle, 11,000-volt steam turbine driven generators, having direct-connected 250-volt exciters.

Four 300-ampere, 11,000-volt feeders.

Two 20,000 K. V. A. outdoor transformer banks, each bank consisting of three 6666 K. V. A. single-phase transformers arranged for 11,000-volt low tension and 132,000-volt high tension, the low-tension side being connected "delta" and the high-tension side "star" connected, with neutral point grounded.

Two 150-ampere, 3-phase, 132,000-volt outgoing feeders.

Two 20,000 K. V. A. outdoor transformer banks, each bank consisting of three 10,000 K. V. A. single-phase transformers arranged for 11,000-volt low tension and 66,000-volt high tension, the low-tension side being connected "delta" and the high-tension side "star" connected with neutral point grounded.

Five 66,000-volt outgoing feeders, one of which will be used for supplying power to the West Penn Traction Co.

The original plans called for two generators, but the demands on the company increased so rapidly since work was started that during the year it was decided to double the capacity in order to take care of the business.

In the design of this station the idea of a "unit" system arrangement was carried out, i. e., each generating unit is isolated, as it were, from the others. The buses are sectionalized with respect to the generators, and to each "generator" bus section a 3-phase, 1800 K. V. A. transformer is connected, which feeds the unit auxiliaries. An "auxiliary" bus is fed by an independent 3-phase, 1800 K. V. A. transformer, which furnishes

DYESTUFFS INDUSTRY DEPENDENT ON PROTECTIVE TARIFF.

Otherwise Country Cannot Have High Explosive Industry in Time of War.

Cincinnati, O., February 28.

Editor Manufacturers Record:

In reference to inquiry answering your letter, we are not building a factory for dyestuffs or any product whatever in the State of Kentucky. We did take over during the past year an old defunct barium sulphate plant at Stamping Ground, Ky., but have recently removed that plant to our St. Bernard works near here.

We, late in 1914 and during the year following, were forced into the manufacture of some intermediates and dyes in order to maintain our regular ink business. This new work of acids and heavy chemicals, on the one hand, and of aniline dyes, on the other, is still being pushed vigorously by us, with the result that we are producing not only all the dyes required in our business, but are serving others in various lines in addition.

With the proper protection extended by the Government at the close of the war, we are convinced that this country can and will be forever independent of any foreign source of supply; and when it is remembered that without a dyestuff industry in time of peace no country can ever have a high-explosive industry, instantly available for its Government, in time of war, it would seem as though no further argument should be necessary in order that the necessary legislation protecting the industry should be speedily passed.

THE AULT & WIDORF COMPANY,
By L. A. AULT, President.

New \$250,000 Chemical Plant.

Approximately \$250,000 is the investment of the E. C. Klipstein & Sons Company, South Charleston, W. Va., in its chemical manufacturing plant now about completed. This includes a four-story 120x58-foot main factory, a 40x22-foot storage building and a 39x22-foot office and laboratory, all of reinforced concrete construction, costing \$100,000. The architect and consulting engineer in charge is Charles Houchin Higgins, and the building contractor is the William L. Crow Construction Co., both of New York. The equipment of machinery cost \$150,000, and it includes these contracts: Refrigerating machinery, furnished by the Frick Company, Waynesboro, Pa.; piping and other apparatus by Almirall & Co., New York; electric motors by the Lincoln Electric Co., New York; well by J. H. Rogers, Charleston, W. Va.

BEAUMONT IRON WORKS EXPANDING.

Capital Stock Increased from \$100,000 to \$225,000—Will Probably Be in the Market for Additional Equipment.

Regarding the increase in capital stock and substantial growth of business of the Beaumont Iron Works, Mr. L. J. Black, president of the company, writes the MANUFACTURERS RECORD as follows:

"On recommendation of our Board of Trade, the stockholders have taken favorable action on the proposition to increase the capital stock of the Beaumont Iron Works Co. from \$100,000 to \$225,000, paying in \$65,000 in cash and \$60,000 in stock dividend from the surplus accumulated, the \$65,000 to be used for the erection of plant for the making of steel castings and other improvements that are suggested.

"The present stockholders and management of the Beaumont Iron Works Co. dates from 1910, when the plant was bought at receiver's sale and reorganized at that time. Since 1912 the appraisal value of the property has increased from about \$98,000 to \$182,000. These appraisals have been made by the American Appraisal Co., Milwaukee, Wis.; one appraisal dated January, 1912, and the other dated January, 1917. The business of the concern has grown from practically nothing in 1910 to a volume of almost one-third million dollars annually. Our business principally consists of manufacturing oil-well machinery, supplies and equipment, together with a line of sawmill specialties and heavy repairs. The company makes a specialty of handling heavy work of any description, and since the advent of deep water to our docks we have gone extensively into marine repairs.

"We will probably be in the market for the following equipment at an early date: Six-ton electric traveling crane, 40-ft. span; steel plant 70x130, main bay 40 ft., side floor 30 ft.; sand-grinding machines, sand-mixing machines, sand-blasting room, acetylene-gas welding and cutting equipment, foundry saw, industrial trucks, cars, etc.

"The active officers of the company are: L. J. Black, president; Ed. Paggi, treasurer; C. B. Sheeks, secretary.

"We are operating at the present time a forging shop, gray iron and brass foundry and machine shop, employing approximately 125 men."

Organization of Chattanooga Engineers' Club.

Following the work done by about 20 engineers on the inventory for industrial preparedness, a meeting to organize the engineers of Chattanooga was called in July, 1916, which appointed an organization committee that called a meeting for August 7. At this meeting the Chattanooga Engineers' Club was organized and a con-

stitution was adopted and signed by 41 charter members and officers were elected.

Business meetings are held each month, and noon-day lunch meetings are held every two weeks, at which short and interesting talks are given relating to various branches of the profession. The attendance at these meetings, as well as at the monthly meetings, has been very gratifying to the organizers and officers, often running as high as 60 at the noon lunch meetings.

The following officers were recently elected for 1917: President, J. Y. Bayliss; vice-president, J. A. Fairleigh; secretary and treasurer, A. F. Mellen; board of governors, O. B. Agner, W. G. Atwood, G. W. Enight, W. H. Sears and D. H. Wood.

The membership has recently passed the hundred mark, and it is growing fast.

The Railroad Situation as Seen by a Leading Coal Operator in West Virginia.

Ward, Kanawha County, W. Va., March 1.

Editor *Manufacturers Record*:

One billion dollars annually would be saved to the people of the United States if the present unwise policies being pursued by the railroads were corrected promptly.

Column after column is being printed weekly and almost daily in most of the leading newspapers of the country, many of which are controlled directly or indirectly by railroad influences, giving reasons and explanations for the present unusual market price of coal, most of them emphasizing the fact that the scarcity of coal and the present market price is the direct result of a scarcity of labor.

This false impression is the result of people writing on a subject relative to which they have no intimate knowledge, or it is a deliberate organized movement to fool the people, as I will show below, and I will guarantee to convince any intelligent interested man who will visit the coal fields of West Virginia of the correctness of my statements, and I will pay the expenses of any man who makes the trip here on such a mission if I fail to convince him.

The shortage of coal during the past five months and the present market price is the direct result of railroads withholding cars which were constructed for the handling of coal and which have been used almost exclusively for that purpose during the past 10 years from the coal industry and permitting them to be used for the handling of commodities that pay a little higher freight rate.

Until six months past, for instance, the road on which we do business furnished its coal shippers about 100 per cent. car supply. During the past five months they have furnished the coal shippers less than a 50 per cent. car supply; during the month of February less than a 20 per cent. car supply.

Now, let us see how that works: The law of supply

and demand governs all of us, regardless of the views of any. During the past six months the short-sighted railroad officials have been supplying industrial plants which burn coal with a sufficient car supply to enable those plants to work 24 hours a day, seven days a week; they have not supplied the industries which produce and furnish that coal with a sufficient car supply to enable that industry to work its plant an average of four hours a day, from which it will be seen that coal is being consumed by industries working six times as many hours as coal industries work, and that condition is what is depriving the public of the coal it needs and is robbing the public of about \$1,000,000,000 annually without in turn being profitable to the producers of the coal, for the reasons that a coal operation can supply the public with coal at a price of \$2 a ton, operating regularly, and make more money than they can selling coal at \$4 and \$6 a ton while operating their plants from one to three days a week.

Now, as to the shortage of labor: If the scarcity of coal was the result of a labor shortage, the coal mines would be operating every day in the week with a small force of men; instead of that being true, they are operating only from one and one-half to three days a week, with a large force of men, and that same force of labor is idle about four days a week, including Sunday, and hardly earning enough for the support of their families.

A 15 per cent. increase in the cars supplied by the railroads for the handling of coal would in six weeks reduce the price of coal 50 per cent. It would not be a great hardship upon the other industries of the country as to car supply; it would save the consumers of coal millions of dollars and give to about 300,000 coal miners a better opportunity than they have now to earn a living.

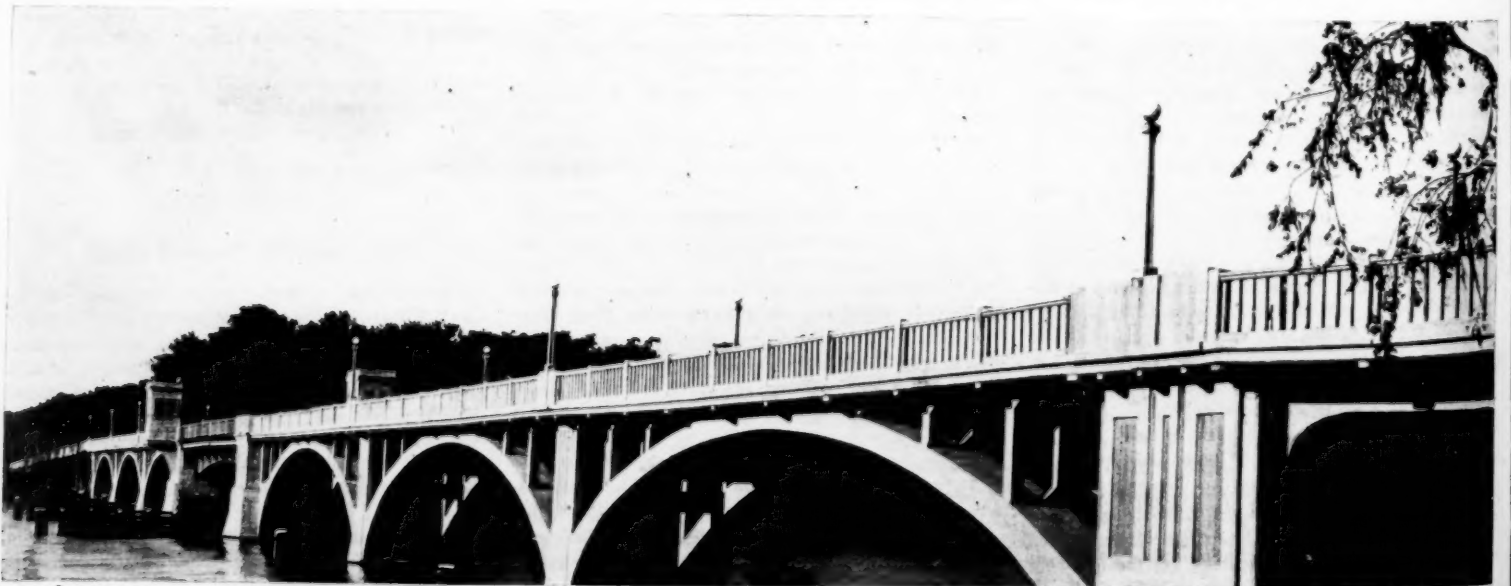
The strange part of the whole business is that this unwise policy of the railroads is actually increasing the operating expenses of our railroads about 25 per cent. at a time when most of them are complaining of not having sufficient revenue with which to properly equip the roads.

I would like to emphasize also that the railroads do not need additional new cars, and should not be permitted to purchase them, but they should be required to distribute cars with some judgment and handle them with some degree of regularity.

When we realize that an average time of 21 days is consumed in moving freight between Pittsburgh and New York, and it takes six weeks for a car of coal to move from West Virginia to Detroit, Mich., practically every terminal in the United States being blocked with cars that do not move, it would convince any intelligent man that the railroads now have too many cars instead of not a sufficient number. The cars which they now own, if properly handled, would move three times as much freight as they have moved during the past three months.

J. W. DAWSON, General Manager,

Kellys Creek Colliery Co.

TYPE OF PERMANENT BRIDGE CONSTRUCTION WHICH IS CHARACTERISTIC OF THE SOUTH TODAY.

CALCASIEU PARISH HIGHWAY BRIDGE, CONNECTING EAST AND WEST HIGHWAY AT LAKE CHARLES, LA. A LINK IN THE OLD SPANISH TRAIL—ALL SOUTHERN—ALL SEASONS HIGHWAY.

This bridge has six arch spans, each 96 feet in the clear; one double-trunion bascule span, 103 feet in the clear; one approach span of 30 feet and twenty-nine girder spans 30 feet each in the clear. Pavement is of bitulithic concrete. Total length of structure 1782 feet. Cost, with approaches, \$175,000.

News and Views from Our Readers

Intelligent Farming the Foundation of All Development.

CYRUS MARSH, Virginia Beach, Va.

You have greatly aided the development of manufacture in the South, but at last all enterprises must be sustained by the culture of the soil. The idea that anybody can do this is a mistake. Our agricultural colleges are doing much in training young men in the science of farming. There is no profession that involves more science than agriculture. The use of commercial fertilizer is valuable, but it should be used in connection with the humus in the soil. This humus must be obtained by the clovers and legumes and by the rotation of crops that will admit the growth of these plants.

Cotton used to be called king, and so it was, but became dethroned by the conditions forced on the South by the carpet-bag government, which forced the planter to rely on cotton to buy his supplies, as on no other crop could he secure an advance. This proved a dismal failure. Cotton can be king again when it is cultivated in connection with producing home supplies and home comforts. Farm bulletins should be issued monthly and so distributed as to reach the farming class, and simple practical ways of knowing the quality of the soil and the method of treating it should be given; for instance, how to remove acidity from the soil, how to prepare land as to subsoil, and what crops will do best and how the fertility can be improved. We want intelligent farming, not farming by the moon nor one-horse plowing that can't stand anything of a dry spell.

A few years ago I visited a home about 20 miles east of Natchez, Miss. Mr. Prichard, the owner, told me he had quit raising cotton except as a surplus crop after raising his home supplies. He told me he had a full supply of corn and meat in the smokehouse, 300 chickens for his table, sugar-cane molasses, honey and a garden of all kinds of vegetables. This was in May. I was soon invited out to dinner, and his table proved all he had said. There was his honey, his molasses, his vegetables, his chickens and good old country bacon. Mr. Prichard said: "In planting cotton I pay no attention to price. When my cotton is ready for the market I put it under my shed. As I need what I can't raise, I carry a bale or two to market, and so I have my bank at home." On his table the coffee, the sugar and the flour for biscuit was all he had to buy.

Leads in Southern Development.

C. A. KILLOUGH, Alpine, Ala.

Enclosed find \$8 to balance my account and subscription one year in advance. I am well pleased with your paper, and must say you are doing more toward the development of the South than any other man. I also endorse your tariff views.

Knoxville to Absorb Suburban Population and Industries.

ROBT. P. WILLIAMS, Knoxville, Tenn.

Within the next 30 days the city of Knoxville will have a population of 85,000 people. The Tennessee Legislature has passed a bill annexing the corporation of Park City, Mountain View, Oakwood and Lonsdale, also several miles of adjacent territory lying between these corporations and the city of Knoxville. This bill provides that the city of Knoxville will take over the bonded indebtedness of the small corporations and make the bonds formerly issued by these corporations more desirable than ever before, as the entire city is behind them now, while heretofore they only had the individual corporation. What assessed valuation of the city with its enlarged boundaries will be, will not be ascertained for several days, but the territory taken in outside of the corporation brings in the numerous factories and manufacturing plants, among which are the Southern Railway shops at Coster, the Brookside Mills, the Knoxville Knitting Mills, the Standard Knitting Mills, the Wm. J. Oliver Manufacturing Co. and numerous other

plants; also additional mileage of the railroads and street railway that will be assessed for city taxes.

Following the consolidation bill a bond bill has been introduced in the Legislature to the amount of \$800,000 that will be passed, and these bonds will be sold and the funds derived therefrom will be used for public improvements in the outlying territory that has been annexed. This act alone means that the city of Knoxville will expend during the next year more than \$1,000,000 for public improvements in the city. At present the city is expending \$225,000 in the improvement of its water plant. These bonds were recently sold to Seasongood & Mayer on a 4½ per cent. basis.

The fact is that Knoxville has always had a population of 85,000, but the corporation limits gave it only 37 in the United States census. An effort will be made to have the Government take a special census of the city this year and show what Knoxville really has and has been.

Efforts Made to Get a Ford Factory South.

W. A. LENEAVE, Manager Southern Timber Co., Crewe, Virginia.

I notice in the MANUFACTURERS RECORD that Henry Ford, the automobile manufacturer, is reported to have been on a visit to Eastern Tennessee, and that it is surmised that he may contemplate the establishment of a branch factory in the South. You ask the question whether anyone in the South has ever taken up with Mr. Ford or other automobile manufacturers the proposition to establish a branch factory in the South. I took the matter up with Mr. Ford about a year ago, trying to get him to establish a branch factory here. I was advised that he would be willing to establish an assembling plant in Virginia, near the coast, where there would be good transportation facilities and good retail market. I then suggested Norfolk as being an ideal point. Mr. Ford replied that he would be willing to establish such a plant at Norfolk. I don't know whether anything yet has been accomplished along that line. All the Southeastern trade could be handled from the Norfolk assembling plant, and it would be well for the Norfolk Board of Trade to take this matter up.

South Might Build Automobile Factory of Its Own.

M. WALTER JOYNER, Vice-President Suffolk Chamber of Commerce, Suffolk, Va.

I note in your issue of March 1 you ask why some of our automobile manufacturers don't come South. The South should build its own factory, in my opinion. The automobile business is about the only class that has not opened branch factories in the South. I tried a year ago to get Mr. Ford to locate in Suffolk. Here factory sites can be had cheap. We have six railroads and deep water, plenty of pure drinking water, also cheap water and electric power for any kind of manufacturing plant; living conditions are good, no crowded houses to spread disease, and the people are coming to such cities for investment. No city of like size can offer greater banking facilities than Suffolk. We have an abundance of raw material for all kinds of woodworking factories and for cotton mills.

The people of the South are today in better shape to buy than they have been for years. If we can only induce our country boys and girls to stay on the farm, the South will go in leaps and bounds. In most cases the city has to depend on the country to produce men to look out for the city's business, but so far it has proven a failure for city boys to try to make good farmers, and I don't think they ever will.

Every man in the South should stand by you and your journal.

American Iron and Steel Institute to Meet in May.

The twelfth general meeting of the American Iron and Steel Institute will be held at the Waldorf Astoria Hotel, New York city, on Friday and Saturday, May 25 and 26, 1917.

100,000 HORSE-POWER HYDRO-ELECTRIC PLANT.

Southern Power Co. Contracts for Another Development in South Carolina—Cost Reported as \$5,000,000.

Another big hydro-electric development has been announced by the Southern Power Co. of Charlotte, concerning which the MANUFACTURERS RECORD has received authoritative details of the new plant as here-with:

"Under the terms of a contract just made by the Southern Power Co. an immense hydro-electric power plant is to be erected on the Wateree River, seven miles above Camden, S. C., and it will be two and a half times as large as the largest plant of this company now in operation. The new plant will be known as 'Wateree.' It will develop 100,000 electric horse-power and is to be completed on or before November 1, 1918. The contract for the construction of this plant has been let to the Hardaway Contracting Co., Columbus, Ga., which recently completed the Fishing Creek plant and is now building the big plant at Bridgewater, north of Morganton, N. C.

"The dam at Wateree will be nearly a half mile long (slightly more than 2500 feet), and will impound water which will drive five units of hydro-electric machinery, each with a capacity of 20,000 electric horse-power. This power will be turned into the Southern Power system through a 20-mile transmission line from Wateree to Great Falls, and will there tie into the more than 1600 miles of three-wire high-tension transmission system of the company.

"The site for the new plant is near the confluence of the Wateree Creek into the Catawba River, which here becomes known as the Wateree River, and will make the seventh plant located on this stream. The others are Great Falls, Fishing Creek, Rocky Creek, Catawba, Lookout Shoals and Bridgewater. All except the latter are now in operation, and the work on Bridgewater has been under way since last summer.

"This latest plant is to be by far the largest ever erected by the Southern Power Co., Fishing Creek, with a capacity of 40,000 electric horse-power, being the nearest to it. That it is of but 100,000 electric horse-power instead of being much larger is attributable, it is said, to the inability of the company to secure needed real estate at a price which would justify the additional expenditure. It was planned to erect a much larger plant than this, and all arrangements preliminary to the letting of the contract were completed to this end, but the failure to obtain the needed lands at a reasonable price resulted in a material reduction in the size of the plant.

"The contracting company which has the contract is already at work on the job to the extent of gathering material and getting on the ground ready for actual construction. Although the contract is immense, the Hardaway Contracting Co. has contracted to turn it over to the Southern Power Co. on or before November 1 of next year, which means that its construction will be pushed to the limit of efficiency in an effort to put it into operation at the very earliest possible moment to care for increasing demands for cheap power."

It is understood that the new development will represent a total expenditure of \$5,000,000, the Hardaway contract alone approximating \$2,000,000.

A Pointer for American Manufacturers of Shoes.

The attention of the Leeds (England) consulate has been called to a recently patented method of manufacturing boot soles from scrap leather. It is claimed that the soles are non-suction, non-slipping and waterproof, and can be produced at a much lower cost than the ordinary leather sole. Owners of plants for heel building, it is believed, will find themselves in a position to conveniently adopt the new process.

It is also claimed that the novelty of the patent may be enhanced by an ingenious arrangement of strips of rubber attached to a thin layer of canvas, the rubber strips fitting into the interstices of the leather sections. This is said to give a pleasing resiliency to the step of the wearer and to do away with the aching of the feet sometimes produced by purely rubber soles.

STATUS OF RIVERS AND HARBORS BILL.

Old Appropriation Will Carry Work Till June 30—New Congress Likely to Meet in May.

Washington, D. C., March 5.—[Special.]—The failure of the last session to pass the Rivers and Harbors bill will necessitate its being taken up again. The appropriations already available will continue until June 30 of the present year, after which there will be no funds for work or improvements until a further appropriation is made.

There will probably be an extra session of Congress not later than the middle of May. At that time there is every likelihood of the Rivers and Harbors bill being taken up in the form in which it passed the House.

Owing to the short time intervening between that date and the close of the fiscal year, it may be that, instead of discussing the bill and providing for the items in detail as in the last House bill, there will be a lump-sum appropriation made. In that event the entire amount will be turned over to the Board of Engineers of the United States Army, which will determine the manner in which the funds will be utilized.

Europe as a Market for the American Manufacturer.

Editor *Manufacturers Record*:

Something approaching a revolution has happened in international relationships, and just how it will all sort out is on the knees of the gods.

There is such a mix-up, such complications, such distrusts and such a disposition to resolve into national or allied compacts that it looks as if the business of the world would become a kind of big family arrangement, centering around reciprocal confidence and relationships. But pressing universal need and demand will correct all this, and what was will, to a large extent, be.

Now, any tyro in reading the future will know that the requirements of Europe in the immediate time to come will be enormous. Production has been commandeered for the act of war, the acts of peace have been neglected.

Producers have been absorbed by the fighting interest; a big proportion have been killed or permanently disabled, and the natural quota of new skilled workers are not being trained.

The conditions that will exist here after the war would not meet normal requirement, but requirement will be altogether abnormal, and the system, if it be based on the national or allied family plan, will break down at the start.

Then, but perhaps not till then, will come America's chance, the greatest chance in the whole history of industrialism. But sitting down and waiting for the ripe cherry will not secure it.

There must be smart propaganda work, European buyers must be familiarized with American commodities beforehand, with a knowledge of where to turn in emergency.

Now, a big mistake was made by a combination of American manufacturers who purposed installing themselves in palatial London quarters, mobilizing an army of smart American salesmen and capturing the European market before the natives were awake.

If the mighty war has accomplished one thing, it is the rousing of the British manufacturer from the Rip Van Winkleism into which he had fallen, and he is not likely to become drowsy again in a hurry.

So his immediate action, in view of this latest American aggression, was to organize a series of British industries fairs, under the auspices of the British Board of Trade, to introduce manufacturers' supply to buyers' demand, and the first of these are being held simultaneously at London and Glasgow during the last week of February coming and the first week of March.

Then it must be said that while Britain and her allies have been immensely indebted to America thus far in the matter of war productions, certain manufacturers did not "play the game," and a feeling of distrust has sprung up that will have to be dissipated.

Manufacturers will also have to face other terms than, say, "25 per cent. cash with order," or, "cash against documents in New York." British manufacturers get no such favored treatment when doing business in America. Now a few of the lines in which

there will be almost immediate and prospective demand are railway equipment, marine work, all kinds of electric appliances, agricultural machinery, underwear, prepared foods, decorative goods and furniture.

If American textile men were expert enough to solve the "maquette" difficulty, the huge German monopoly in this popular fabric for domestic and marine upholstering purposes might yet be captured.

British manufacturers have been experimenting with this for two years, and have signally failed.

If America could now send over good samples, equal to German manufacture before the war, orders for miles of it could be immediately taken.

In the matter of furniture, except in roll-top desks and office equipment, there has been no export furniture trade from America to the old country. There are two reasons for this: The American home market can absorb the supply, and there has hitherto been little affinity between the decorative idea in the Western and the Eastern worlds.

The ideas, however, are becoming assimilated, and furniture supply here has fallen so low that in the biggest furniture factory in the world, located near London, the percentages of output today are 95 munitions, 5 furniture.

With the war weddings and after war weddings in Britain, and with renewals on the continent after devastation, and with all stocks depleted and producing staffs seriously reduced, where will furniture for European requirement be found except in America?

The evident duty of the American manufacturer, mindful of cultivating an export trade, is to become quickly conversant with European style and demand, produce stock rapidly, enter on a preliminary campaign and be ready for the big harvest.

It is not reasonable to suppose that America's automobile exports to Europe will largely increase after the war. Hundreds of munition factories have been run up or improvised when these are no longer required, for war productions, many will be on the list of automobile factories.

J. TAYLOR.

46 Gordon Street, Glasgow.

Great Growth of Electric Storage Battery Industry in Recent Years.

An enormous increase is reported to have occurred in recent years in the demand for storage batteries. The use of electric starters on automobiles has become so general that during 1916 alone about 1,000,000 storage batteries were manufactured for this purpose. The effectiveness of submarines as demonstrated in the European war has brought about an increased demand for large storage batteries to operate these boats when submerged. The increased use in electric commercial vehicles and industrial trucks has also called for an ever-increasing number of batteries.

The larger electric-lighting and power companies throughout the country have turned to storage batteries to protect their customers against interruptions in service.

Country residents living beyond the reach of the wires of central electric-lighting and power companies are no longer deprived of the advantages of electricity. Small electric-lighting plants, consisting of a gas, gasoline or kerosene engine, generator and storage battery now make it possible for isolated residences, stores, etc., to have a full 24-hour electric service, a few hours' running of the engine occasionally storing in the battery electric current to be used when desired.

The growth in the use of storage batteries for these services as well as for wireless, telegraph, telephone, railway car lighting, railway switch and signal, motorcycle and other purposes has taxed the storage battery manufacturing facilities of the country.

It is interesting in this connection to note the growth of the Electric Storage Battery Co. of Philadelphia, Pa., the oldest and largest battery maker in the country. This company began its business in 1888 in Gloucester, N. J., in a small building, with only five workmen. A few years later the company moved to Philadelphia, where it now occupies a plant consisting of 25 buildings, which together have a floor space of over 20 acres, and has on its payroll over 3000 men.

During 1916 the company built a large seven-story reinforced concrete building and a two-story brick building in order to take care of its increasing business, and there is now under construction another eight-story re-

inforced concrete building which it is hoped to complete in July of this year.

This company has been a leader in developing new and special types of storage batteries to meet various demands. Its "chloride accumulator" is the standard battery used by the Bell Telephone Companies, the Western Union Telegraph Co. and in hundreds of municipal and isolated electric-lighting plants. The "Exide" battery is said to be the most widely-used battery in the world. It was the first commercially successful automobile starting and lighting battery, and today there are hundreds of thousands in use. It is credited with being a leading factor in the success of the electric pleasure and commercial vehicle. It is largely used by the United States Government for electric vehicles, wireless service, gun firing, and is the battery with which many of the submarines in the United States Navy are equipped. The most recent development in storage batteries is the "Ironclad-Exide," for electric vehicles, mine locomotives, industrial trucks, tractors, etc.

The Electric Storage Battery Co. is said to be spending large sums of money each year conducting experiments toward the further development of the storage battery, but new types of batteries are not marketed until thoroughly tested.

Orangeburg Packing Plant Contracts.

All contracts have been awarded for the Orangeburg (S. C.) Packing Co.'s \$200,000 meat-killing and packing plant, for which proposals were recently invited. The main building will be of reinforced concrete and brick 200 feet long by 80 feet wide, to be equipped with machinery for a daily capacity of 500 hogs and 150 cattle. Wilson & Sompayrac of Columbia, S. C., and the Packers' Architectural & Engineering Co. of Chicago are the architects and engineers.

The contracts were awarded as follows: Building, McKenzie Building Co., Augusta, Ga.; packing-house equipment, Brecht Company, St. Louis; refrigerating equipment, Carbondale (Pa.) Machine Co.; engines, Skinner Engine Co., Erie, Pa.; boilers, Bass Manufacturing Co., Fort Wayne, Ind.; tower and tank, R. D. Cole Manufacturing Co., Newnan, Ga.; electric generators, motors and switchboards, Westinghouse Electric & Manufacturing Co., Pittsburgh; steam and pipe fittings, W. B. Guimarin Company, Columbia, S. C.; insulation, Armstrong Cork Co.; elevators, Otis Elevator Co.; both of New York.

New Zealand Wants American Products.

ALLAN CAMERON, P. O. Box 1018, 188 Cashel Street, Christchurch, New Zealand.

Please send sample copy and advise subscription price for New Zealand. I am in the market for a cheap tail light for motorcycles and red reflector for bicycles. The light to be just a plain lamp throwing a plain light on the number, which is on a plate about 2x8 inches, and I want the price to be around 75 cents to \$1 delivered here, the reflector to be 1½ inches minimum size and to cost not over 25 cents delivered here. There is also a demand here for small portable sawmills, about 2000 to 3000 feet capacity for 10 hours, the engines used being six to eight horse-power. It occurs to me that America ought to be able to quote competitive prices now on twine for wrapping goods in shops and for white and colored cotton duck cloth.

For General Foreign Trade.

GEORGE T. KENNEDY, 1626 Thirteenth Avenue, Seattle, Washington.

I wish to get in touch with reliable and progressive importing and exporting concerns, with the view to engaging in that trade, either as salesman or department manager after demonstration of worth, and I have been told that your journal is a power amongst the foreign trade. I am taking a university extension foreign trade course here, and have had much experience in both selling and in the office divisions of business, and am well trained in business practice, especially in the rubber business. I wish to get in touch with some concern who will appreciate worth and ambition, character and experience.

ACTIVITY IN SHIPBUILDING AT SAVANNAH.

Half a Dozen Schooners Under Construction at Shipyards of Southern Port.

Savannah, Ga., March 5—[Special.]—With half a dozen large size schooners under way in the shipyards at Savannah, and more in prospect, Savannah is contributing an important part to the activity of the shipbuilding industry in this country, and is a noteworthy example of the revival of interest which has occurred in a number of Southern ports. At the yard of the Savannah Engineering & Construction Co., at Millhaven, three schooners are under way, with an aggregate tonnage of 6000 tons, while at the yards of the Georgia Shipbuilding Co., on Hutchinson Island, vessels of practically the same tonnage are also under construction.

The vessels of the Savannah Engineering & Construction Co. are schooners of 236 feet length over all, 40 feet beam and will draw 19 feet of water loaded. Auxiliary engines will be installed of the Diesel type, burning fuel oil.

These vessels are being built for a New York ship concern, and it is understood that orders for other vessels will be placed as soon as these are completed.

Movement of Crude Petroleum in United States.

A summary of the movement of crude petroleum in January, 1917, representing the operations of 91 pipeline and refining companies, has been prepared by the United States Geological Survey. These companies handle or receive oil from the various productive fields east of the Rocky Mountains. The compilation includes statements filed by 30 companies operating in the Appalachian field, 9 in the Lima-Indiana field, 6 in the Illinois field, 30 in the Oklahoma-Kansas field, 8 in the Central and North Texas field and 8 in the Rocky Mountain field.

Quantities of crude petroleum moved from field sources, in barrels of 42 gallons each, were: Appalachian, 1,682,615; Lima-Indiana, 287,999; Illinois, 1,433,528; Oklahoma-Kansas, 7,436,010; Central and North Texas, 783,987; Rocky Mountain, 868,357.

Quantities of crude petroleum delivered to refineries or consumers, and stocks on hand at the end of the month, for January, 1917, compared with December and January, 1916, were:

Fields.	January, 1916.	
	Deliveries.	Stocks.
Appalachian	1,919,649	7,174,434
Lima-Indiana	1,686,319	4,498,166
Illinois	544,019	9,321,491
Oklahoma-Kansas		5,102,218
Central and North Texas		
Rocky Mountain		

The greater part of the apparent increase in stocks in the Oklahoma-Kansas field in January is due to the purchase by companies whose reports are here tabulated of storage oil formerly owned by companies from whom reports covering the three months indicated have not yet been received.

Ladies Lead the Way in Plans for Development of Virginia Town.

Coeburn, in Wise county, Virginia, is ambitious to have water-works and sewers and a modern hotel, and an especially potent influence in arousing civic pride in these achievements is the Ladies' Civic League of Coeburn. Under the stimulus of the members of the league a spirit of determination to make Coeburn the cleanest, prettiest and most sanitary residential town in that mountain section has been fostered, and reports from Coeburn are that the mayor, town council and leading business men of the place have been heartily enlisted in the movement. It is proposed to enlarge the boundaries of the town, and to make more prosperous the extensive farming area that surrounds the place, plans are under way to employ a farm demonstrator so that city and country may both thrive alike. It is reported that the Norfolk & Western Railroad, through its industrial agent, F. H. La Baume, is co-operating in the work so energetically initiated by the Ladies' Civic League.

SHOULD MUNICIPALLY-OWNED UTILITIES "DRUM UP" TRADE?

Danville Merchants Raise a Question of Interest to all Communities Owning or Proposing to Own Lighting and Power Plants.

Danville, Va., February 28—[Special.]—The entire question of municipal ownership of public utilities has been brought sharply to the foreground here during the past few weeks, and one phase of it threatens to bring about a referendum within the next month; that is to say, if the claims set forth by the superintendent of the plants and his coworkers make a telling impression on the minds of the City Council.

The engrossing problem is whether or not a municipality owning its own electric-light and power station can enter the retail field and compete in the sale of electrical appliances with merchants who pay the city to do business. Can the city, in effect, send out representatives to "drum up trade" for its plant in the approved and aggressive fashion known to private firms and public corporations? Citizens of Danville, who foresee a lower rate on current and a consequent shrinking of their monthly bills, assert with emphasis that Danville can with propriety go after prospects. Merchants and dealers, seeing a danger in what they term an invasion of their trade territory, maintain that the city which receives their license money cannot legally enter into competition with them, and predict injury to the town's growth if such a radical change in the municipality's policy materializes. Still others oppose the proposition on the ground that it is a dangerous expansion of the city ownership plan.

Danville was the first city in the United States to own and operate its own street-lighting system. That was 30 years ago. Such was the success of the venture that the city-owned system developed along healthy lines, and in the year 1900 Danville entered the city utility plan on a wide scope, the municipality undertaking to sell electric current for commercial and domestic purposes, operating its own gas manufactory and the water-works. In 1911 it was decided to build a new electric power plant operated by steam, the older water and steam plant being quite inadequate for the increasing demand for power. The result is that today, excluding franchise values, the physical value of these three plants represents a total of \$975,000—electric light, \$325,000; gas, \$225,000; water, \$425,000.

All of these utilities have proven a splendid paying investment, particularly the electric-light plant, for the current for commercial purposes is sold at such a rate

December, 1916.	Deliveries.	Stocks.	January, 1917.	Deliveries.	Stocks.
Barrels.	2,111,567	6,364,144	Barrels.	2,206,642	6,401,474
	1,521,962	4,122,779		1,578,884	3,794,289
	502,548	5,555,444		540,907	5,214,527
		12,543,712		4,006,236	17,396,636
				821,277	2,520,004
				589,779	890,926

as to readily induce manufacturing enterprises to connect up and avoid the heavy expenditure incidental to building and operating individual power units.

Thus the electric-light plant, which cost the city \$240,000 to build and equip, did a business during the past fiscal year (May 1, 1915, to May 1, 1916) of \$103,870.95. The expenditures in connection with the plant were \$55,634.50, indicating a profit, not counting wear and tear and general depreciation, of \$48,236.37.

Since the new plant was built, in 1914, the expansion of the city plant's business has not been as large as it should have been or (in the estimation of the city light committee and Frank Talbot, superintendent of the plant) would have been had the city gone into the field and attempted to stimulate the demand for power. It is owing to this fact that the present quandary has been brought about. When the "peak" load is being borne at the power-house not more than one-third of the actual capacity for productive energy is being used—only two of the four boilers are kept fired, for the new plant was built to take care of future needs and to provide space for generators with a total capacity of 4500 kilowatts.

This was the situation presenting itself a month ago, and the council committee came to the conclusion that as the current demand was not increasing of its own impetus that the city should "go after" business.

With some hesitation the council agreed to a project whereby citizens desirous of consuming current could have their homes wired by local contractors, the bill

being sent to the city light department, which promptly paid it, the city being repaid by the citizen by instalments on his monthly bill. At the end of one month nine such contracts had been turned in, these from a town of 25,000 people, 2500 of whom were already current consumers before the new plan became effective. The council committee, seeing these results, claimed that the electrical dealers were not properly co-operating nor striving to sell electrical appliances. Next came the proposition for the city to sell the electrical devices, and this precipitated the present trouble. The dealers claim that the city, with its ample financial backing, could sell all types of electrical and current-consuming appliances on a basis of payment with which it would be impossible for the average electrical dealer to compete, and that ultimately the city would have a monopoly of the business. Hardware dealers, scenting a possible future development of municipal ownership in the sale of gas stoves and ranges, linked forces with the electrical contractors. The opposition by degrees became solidified by other retail merchants, who are now conducting an active lobby to defeat the designs of the municipal ownership champions.

Last week the council divided on the issue, the Aldermen favoring the proposition in essential details, the Common Council defeating it. A resolution calling for the issue to be placed before the people at large has been referred to the light committee, and, since the committee is almost unanimous in favoring the new project, it will doubtless be favorably reported at the council's next meeting, two weeks hence. There is keen public interest here in the issue, as there will doubtless be among communities elsewhere.

New Southern Graphite Developments.

Preparations are progressing for the Quenelda graphite developments of the Eagle Graphite Co., Ashland, Ala. The initial installation of machinery has been purchased for a daily capacity of 200 tons of crude ore, 200 acres to be developed. It is contemplated to build another plant this summer and an addition to the refining plant, so as to manufacture lubricants, paints and polishes. The company has a capitalization of \$100,000.

During May the General Graphite Co. of Birmingham will begin to develop graphite property in North and South Carolina. Three or more mines will be operated and various graphite products will be manufactured. Probably the company will establish its refinery and manufacturing plant at one location, shipping the concentrates from the mines to these plants for finishing. This company is capitalized at \$1,500,000.

Plans of \$1,250,000 Copper Company.

The MANUFACTURERS RECORD is advised that the Ocoee (Tenn.) Copper Co. has encountered high-grade ore in four places, with diamond drill, on 120 acres. This company expects to sink a shaft, and will build a smelter. It was mentioned last week as incorporated with \$1,250,000 capital, and it has organized with these officers: J. I. Carter, president; John Stagmaier and G. H. Miller, vice-presidents; Sam E. Whitaker, secretary; P. B. Carter, treasurer; all of Chattanooga.

For Electric Plants in Brazil.

JOSE DE ARANJO BARROS, 60 Rua de S. Christovam, Aracaju, Sergipe, Brazil.

We are under contract with some municipalities for economical electrical lighting systems. We want generating outfits to be operated by economical motors using poor gas, this being a cheap gas made from wood, which is the most practical combustible for us, and on that account given preference in the country. You will please favor me by having catalogues and some particulars sent me in regard to direct current of 25, 35 and 50 kilowatts, under 220 to 250-volt pressure, including data on main cables, distributing connections and small installation. The loss on line is calculated at 12 to 13½ per cent., we using 220-volt lamps, which give a perfect light without danger. We wish economical lamps, meters, insulators, contact-breakers, etc.

The Iron, Steel and Metal Trades

STEEL OUTPUT REDUCED 30 PER CENT.

Cold Weather and Demoralization of Railroads Seriously Affect Steel Production—Peculiar Situation in Unfinished Steel—Pig-Iron Advancing.

New York, March 5—[Special.]—Although the various steel mills of the country have not completed their tonnage statements for February, it is authoritatively stated that operations during that month were equal to about 70 per cent. of capacity. The falling off in production is due to severe cold weather and the demoralization of railroad service. Practically all of the mills were affected by inability to obtain coke. A shortage of natural gas added to their troubles. As the month closed the situation showed a slight improvement, operations being about 85 per cent. of capacity. It is not anticipated, however, that this betterment will last very long, as the mills are unable to accumulate any stocks of raw material which will enable them to ignore new railroad embargoes.

There was some improvement in blast-furnace operations last week, with somewhat better receipts of coke, but conditions are still very bad. The United States Steel Corporation's purchases of coal enabled its idle plants to resume operations. The upper and lower Union Mills at Youngstown, O., resumed on Wednesday, after having been shut down for lack of fuel. Four furnaces at Lorain, O., remained banked from lack of coal, but the Carnegie Steel Co. has only about half as many furnaces idle as heretofore, there now being 13 idle, 1 banked and 12 out of blast. The steel mills report somewhat improved transportation conditions. One large steel interest piled only a little steel last week, and hopes to break even next week, while another broke even. Nearly all of the mills have accumulations of steel awaiting shipment, both in the finished and unfinished forms. In some cases the stocks are quite large, and occasionally they are so great as to restrict production, as there is no more room. Such restrictions, however, represent but a small percentage of the productive capacity. In many cases it is now thought probable that eventually it will be necessary to duplicate rollings on account of steel being at the bottom of a pile.

Like every other commercial market, that of steel was very quiet last week, awaiting the action of Congress upon the President's message. There was a considerable amount of business booked, however, but it was entirely of a routine character, mills placing contracts on their books for their regular customers for second quarter, third quarter, or second half, as the case may be. Buyers did not show any particular eagerness to be covered, while on the other hand the mills did not make an active canvass for business. There was very little buying against new requirements developing. Inquiry for freight cars was light, and there was no large volume of structural business taken.

The billet as well as the rest of the unfinished steel market last week developed a rather peculiar situation. Prices for early deliveries stiffened considerably, while those for late deliveries were easier than ever. While some consumers bid almost any price for prompt billets made to their specifications, late delivery consumers showed no interest whatsoever. It was nothing at all to secure \$65 to \$70 or more for early delivery steel, while it is doubtful if even \$65 could have been obtained for late delivery.

It is estimated that the present steel ingot capacity of the country is about 43,000,000 tons, and that the present new construction will result in completion of facilities to add 4,000,000 tons more before the end of the year. There is, however, very little new finished capacity that will be completed in the same time, and, as it is taken that there is a fair balance at present, the prospect is that unfinished steel will become more plentiful. There are also some other important possibilities developing. The war steel rolled into rounds involves heavy cropping, and the same capacity would make more merchantable steel if it was not for this cropping. Then there is a large tonnage of forging billets being produced for shells not passing to finished mills at all. Finally, the large exports of ordinary commercial steel in the form of ingots, blooms and billets must be cut off

some time, releasing additional supplies. All the prospective developments, therefore, are in the direction of making billets eventually more plentiful, in proportion to finished steel.

Buying of railroad spikes was very active last week. The New York, New Haven & Hartford Railroad is in the market for 10,000 kegs for delivery in the first quarter of 1918. The Boston & Maine is negotiating for 10,000 kegs for delivery in the first half of 1918. The Canadian Government is in the market for 6000 kegs, while the New York Central has ordered 25,000 kegs from three manufacturers for delivery this year.

The steel trade was much interested in the announcement made last week that contracts for the construction of six oceangoing ships, ranging from 7500 to 10,000 tons, had been placed by the Cunard Steamship Co., with subsidiaries of the Bethlehem Steel Corporation.

The pig-iron market last week developed great activity, and consequent increasing strength. Foreign inquiries were in the market for 100,000 tons. Italy sounded the market for 30,000 tons iron, while there were also inquiries for round tonnages from Norway, Sweden, England, Spain and Portugal. The English inquiry was for a large tonnage of steel-making iron, while the other inquiries were for foundry grades. Not since early in January has foreign demand for pig-iron assumed such large proportions, and the pressure of this demand is serving to further stimulate price advances. No more Eastern Pennsylvania iron is to be had at \$33 furnace, the price having advanced to \$34 furnace for No. 2 grade, which is now the minimum quotation. A Southern Ohio furnace has advanced its price to \$35 Iron-ton basis. Some Eastern Pennsylvania furnaces are asking as high as \$35. Spot valley foundry iron has been advanced as high as \$38 furnace in some instances.

Domestic buyers were also in the market last week for large tonnages. Buyers were quick to take advantage of the announcement that the New York, New Haven & Hartford Railroad had lifted its embargo on pig-iron, and Connecticut valley consumers wired instructions to rush all pig-iron that could be shipped before the embargo was restored.

(Dealers' average buying prices for gross tons.)

Bessemer billets (nominal).....	\$65.00—\$70.00
Open-hearth billets (nominal).....	65.00—70.00
Open-hearth sheet bars.....	65.00
Bessemer sheet bars (nominal).....	65.00
Forging billets.....	90.00
Wire rods.....	75.00—80.00
Tank plates.....	3.75—5.00
Steel bars.....	3.00—3.25
Refined iron bars.....	3.25
Rails.....	50.00—51.00
Steel hoops.....	4.00—4.50
Cold-rolled strip steel.....	6.50—7.00
Sheets, No. 28 gauge.....	4.50—4.75
Galvanized sheets.....	6.50—7.00
Wire nails.....	3.00
Cut nails.....	3.00
Plain fence wire, base.....	2.95
Barb wire, galvanized.....	3.85
Railroad spikes.....	3.40

PIG-IRON.

Bessemer, Pittsburgh.....	\$35.95—\$36.95
No. 2 foundry.....	36.95—38.95
Basic, valley.....	30.95—32.95
Gray forge (nominal).....	30.95—32.95
Basic, Philadelphia.....	30.50—31.50
No. 2 foundry, Northern.....	33.75—34.75
Low phosphorus.....	60.00—
No. 2 foundry, Buffalo.....	35.00—
No. 2 South, Cincinnati.....	29.90—32.90
Northern foundry, No. 2 Cleveland.....	35.30—

SCRAP-IRON AND STEEL.

Heavy melting steel.....	\$22.00—\$23.00
Old steel rails, rerolling.....	27.00—28.00
Old iron car wheels.....	20.00—20.50
Old steel car wheels.....	26.00—27.00
Steel car axles.....	43.00—45.00
Iron car axles.....	40.00—41.00
Low phosphorus.....	32.00—33.00
No. 1 cast scrap.....	19.50—20.00
Heavy cast scrap.....	18.50—19.00
No. 1 railroad wrought.....	22.00—23.00
Cast borings.....	12.00—12.50
Machine shop turnings.....	11.75—12.00
Railroad malleable.....	19.00—19.50
Stove plate.....	11.00—12.00

\$30 Pig-Iron Talked Of at Birmingham.

Birmingham, Ala., March 6—[Special.]—But little iron is available in the South for the second quarter, and manufacturers are holding off from the market so far as delivery during the last half of the year is concerned. The last sales reported were at \$26 per ton

No. 2 foundry, basic and No. 2 soft, \$1 advance within a week, but when withdrawal was announced by three and more companies the intimation was given that not until \$30 had been reached in quotations would there be a willingness to return to selling. It became known, however, that before the week was out that a tentative offer on the \$30 per ton basis had been made, but the company receiving it was not in position to handle the business, time of delivery given considered. Inquiry elicits the information that there is not much iron, to say the least, that can be had for second quarter delivery, and the selling into the probable make of the third and fourth quarters has not been very meager, either.

Prominent iron men of the Birmingham district decline to express an opinion of the market so long as their respective companies are out of it. Others are inclined to believe there will be a famine, as inquiries in hand indicate that there will be a need for a large amount of iron before the year is out.

Embargoes are still tight, generally speaking. For a day or two there was a release of this or that embargo and the past week saw considerably more iron moved out of the Southern territory than for several weeks past. The lifting of the embargoes, however, lasted but a day or two in each instance. Southern railroads are making a strenuous effort to give better service to the iron producers, but the principal trouble is in getting the product through gateways where there is a congestion. Some improvement was also noted during the past week in the rail-water shipments to New England territory, representatives of Birmingham district iron manufacturing companies being stationed at various Southeastern ports and demanding more ship room than had been given.

Production of iron in the Southern territory is being maintained with a little difficulty, some of the raw material supplies not being as plentiful as it might be. The coke situation in particular is troublesome, while ore movements must be watched closely, too. Home consumption is steady, cast-iron pipe makers melting up to expectations for this time of the year. The American Cast Iron Pipe Co. is taking upwards of \$100,000 worth of pig-iron a month from the Republic Iron & Steel Co., and the yards of the pipe company indicate that preparations are being made for a long siege in operation. The pipe company is working on the railroad connection to reach the Republic company's tracks, after which the contract for molten iron will be in force, the test in manufacturing pipe by that process saving the time and expense of remelting the iron having proven a profitable move. Several specifications of more or less proportions are now being bid on by pipemakers of the Birmingham district, with hopes of consummation. Foundries and machine shops are also requiring much iron and steel. Efforts of the smaller foundries throughout the Southern territory to get as much as a car lot of iron at a time recently have been nothing short of frantic, and there is some suffering.

Larger consumers of pig-iron throughout the country continue to appeal for delivery of iron. Manufacturers in this district have suggested applying to railroad officials for assistance in getting the product. In other words, lifting of embargoes is being asked for.

The coke market situation shows no change. Many inquiries are being received, but, except where there is a car or so available from time to time, the business cannot be accepted. The small-lot business, quick delivery, commands \$12 per ton, foundry coke, while furnace coke steadily holds at from \$5 to \$7 per ton, and even more. The coke production is almost at its maximum in this State.

Interest is manifested in the report of the American Iron and Steel Institute as to the 1916 production of pig-iron and steel, giving Alabama fourth place among the iron-producing States, with a total output of 2,762,885 tons. Previous estimates of the 1916 output were less than 50,000 tons under this figure.

Offers of \$28 per ton, No. 2 foundry, have been received in the Birmingham district, but the business cannot be accepted. There is some iron yet to be had, but regular customers in the main are being protected.

Quotations are given in the South as follows

PIG-IRON.

No. 1 foundry and soft.....	\$27.00 to \$30.00
No. 2 foundry and soft.....	26.00 to 30.00
No. 3 foundry.....	24.50 to 25.00
No. 4 foundry.....	23.50 to 24.00

Gray forge.....	\$22.50 to \$23.00
Basic.....	26.00 to 30.00
Charcoal.....	27.50 to 28.50

OLD MATERIAL.

Old steel axles.....	\$35.00 to \$36.00
Old steel rails.....	18.00 to 18.50
No. 1 wrought.....	18.00 to 19.00
Heavy melting steel.....	15.00 to 16.00
No. 1 machinery.....	16.00 to 17.00
Car wheels.....	15.00 to 15.50
Tramcar wheels.....	14.50 to 15.00
Store plate.....	11.00 to 12.00
Shop turnings.....	8.00 to 8.50

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

HUGE COAL PIER NOW IN USE.

\$2,500,000 Improvement Electrically Operated Has Enormous Capacity.

The Baltimore & Ohio Railroad Co. has completed and just placed in service its new export coal pier at Curtis Bay, Baltimore harbor. It has a maximum capacity of 7000 tons an hour, and is described as being "the largest in the world." It is of concrete and steel construction, and is electrically operated. It cost \$2,500,000.

It is further stated by the company that this is the first pier of its type to be constructed. By means of a system of four loading towers, and two trimming towers, which may be moved from point to point on the pier, together with a system of belt conveyors, the coal is all handled mechanically, instead of being dumped and allowed to reach the holds of ships by gravity, with the result that the fuel is handled with a minimum of breakage. It also increases the speed at which vessels may be loaded. It was designed by M. A. Long, architect and assistant to the chief engineer of the railroad company.

It is possible to work on four vessel with cargo coal and bunker coal simultaneously. The functions of the apparatus are interlocked and controlled by electricity with push-buttons located every 20 feet on each belt conveyor runway. By pushing a button all movements on the belt tower and feeders are stopped. At the superintendent's office is a master control by which the speed of the belts may be established. Cars of 50 tons capacity are commonly handled at the rate of one every minute, and cars of 100 tons capacity one every minute and a half.

\$4,000,000 TO AVOID FLOOD DAMAGE.

Louisville & Nashville Railroad Contemplates Reconstruction of 100 Miles of Line.

The Louisville & Nashville Railroad Co., it is stated, contemplates a general improvement of its main line between New Orleans, La., and Pascagoula, Miss., 100 miles, with the idea of making it secure against flood damage. Engineers are making surveys preliminary to the reconstruction, which is expected to begin early in the coming summer. It is estimated that it will cost about \$4,000,000 to complete it. The general purpose is to raise the tracks sufficiently to place them from five to seven feet above the highest flood-water mark ever known along the Gulf coast in that region. This will also necessitate raising all the bridges on the line, which skirts the shores of Mississippi Sound, including the bridge over Lake Borgne, near New Orleans. It had been contemplated to build an entirely new bridge over Lake Pontchartrain farther removed from the sea, but this would have required a revision of line, relocating the track at some distance inland from canning plants and fishing centers which require rail transportation facilities; hence that idea was abandoned. At the most exposed points lines of piles will be driven to protect the tracks, and the spaces between them will be filled with materials which will resist the rush of waters. Some of the bridges will be replaced with new structures.

Southern Railway's Increasing Earnings.

The Southern Railway reports for January gross revenue of \$6,764,151, increase as compared with the same month of last year \$1,083,800, or 19.08 per cent.; operating expenses, taxes and uncollectible railway revenue \$4,740,015, increase \$608,063, or 14.72 per cent., which would make the net income \$2,024,136, an increase of \$475,737.

For the first seven months of the company's year,

	Lake.	Copper.	Electrolytic.
Monday, February 26.....	35.00-36.00	36.00-37.00	36.00-37.00
Tuesday, February 27.....	35.00-36.00	36.00-37.00	36.00-37.00
Wednesday, February 28.....	35.00-36.00	36.00-37.00	36.00-37.00
Thursday, March 1.....	35.00-36.00	36.00-37.50	36.00-37.50
Friday, March 2.....	35.00-36.00	36.00-37.00	36.00-37.00

	A.S. & R.C.	Independent.	Spelter.	Tin.
Monday, February 26.....	8.50	10.25-10.75	10.67½-10.75	49.87½
Tuesday, February 27.....	8.50	10.25-10.75	10.67½-10.92½	50.50
Wednesday, February 28.....	8.50	10.25-10.75	10.67½-10.92½	51.00
Thursday, March 1.....	8.50	10.25-10.75	10.80-11.05	51.50
Friday, March 2.....	8.50	10.25-10.75	10.80-11.05	53.00

which began July 1 last, the gross revenue was \$46,697,920, increase as compared with the same period of last year \$6,043,687, or 14.80 per cent.; operating expenses, taxes and uncollectible railway revenue \$32,019,006, increase \$3,479,089, or 12.19 per cent., which would make the net income \$14,678,914, an increase of \$2,564,598.

For improvements to roadway and structures the company expended during January \$1,278,004, As against \$1,027,892 in the same month last year, and during the seven months ended January 31, \$8,708,255, as against \$4,465,283 in the corresponding period of last year. It is further stated that in January the company paid out in the South \$1.35 for every dollar received by it in the South during that month.

GREAT TERMINAL NEAR SAVANNAH.

Col. S. G. McLendon of Atlanta Outlines Plans of Million-Dollar Company.

Col. S. G. McLendon, counselor-at-law, 321-323 Kimball House, Atlanta, Ga., who, with others, has applied for the incorporation of the Union Terminal Railway Co., capital stock \$1,000,000, to construct extensive railroad terminals on deep water at the head of Wassaw Sound, eight miles southeast of Savannah, as recently published in the MANUFACTURERS RECORD, says that information concerning the company's plans will be disclosed as soon as its organization is completed, about the middle of March.

In a letter to the editor of the MANUFACTURERS RECORD Colonel McLendon outlines the results which the company aims to achieve as follows:

"Four things are essential to the upbuilding of a great city on the seaboard. These are, first, abundant rail facilities for reaching the interior; second, ample banking capital; third, ample harbor space, and fourth, modern port facilities and services—on the highest plane of efficiency and the lowest level of cost to commerce—of pilotage, towage, lighterage and wharfage. It is the plan of the Union Terminal Railway Co., either under private ownership or Savannah municipal ownership, or municipal ownership by one great interior city, or a combination of a hundred or more interior cities, which really pay all the port charges and furnish 95 per cent. of the water-borne commerce of the port, or under State ownership, to furnish the two last-named essentials, now lacking at Savannah.

"Wilmington River (which skirts Cabbage Island and Wilmington Island and empties into Wassaw Sound) is for more than five miles 3000 feet wide, about 1000 feet wider than the Mississippi River at New Orleans, and at a dredging cost of less than \$500,000 it can be given a 30-foot channel to the sea and an inside anchorage area of about 1500 acres, varying in depth from 26 to 45 feet. Such a harbor will be unsurpassed in America and unequalled in Europe. Once open, this harbor will berth at the Union Terminal Railway docks on Wilmington Island the largest ships that float, and this within about eight miles of the city hall at Savannah.

"All manufacturers, all importers and exporters and all persons contemplating large industrial ventures requiring rail and water transportation facilities should closely watch this development."

Associated with Colonel McLendon in this enterprise as applicants for the incorporation of the company are David C. Barrow, Emily Hand Barrow, H. K. Rickenbaker, B. U. Curry and H. L. McDonald, all of Pelham, Ga., and Samuel D. Hewlett and C. L. Pettigrew, both of Atlanta.

Options have been filed in court for land desired for the site of the terminals, which will be connected by railroad with Savannah.

Southern Cattlemen's Convention.

The convention of the Southern Cattlemen's Association, which will be held at Atlanta, Ga., on April 4, 5 and 6, will include more than 600 cattle breeders of the South, according to a statement made by W. M. Brown, agricultural agent of the Southern Railway in that city. R. K. Boney of Duckport, La., is president and Neely Bowen of Memphis, Tenn., is secretary and treasurer of the organization.

"The livestock industry is developing so rapidly throughout the South," said Mr. Brown, "that not only

cattle breeders, but bankers, packing-house people and other big business interests will be represented at the convention. Officers of the Southern Cattlemen's Association are saying that it will be the best meeting it has held. The speakers will be men of national repute."

An interesting feature of the convention will be the sale of Hereford, Shorthorn and Angus cattle under the auspices of the respective National and State associations. It is expected that several State breeders' associations will be organized.

FARMERS AND RAILROADS.

How They Can Co-operate and Thus Increase Production of Food in This Country.

What the Baltimore & Ohio Railroad Co. is doing to increase the production of foodstuffs was recently discussed by W. W. Blakely, its interchange commodity agent, before the Agricultural College Club of Delaware College, Newark, Del. He said that there is a way to make one acre do the work of two acres, and the company is ready to point it out to farmers in order to rectify conditions revealed by statistics of the decade 1900 to 1910, which showed an increase of 21 per cent. in population in this country, but only a 3½ per cent. increase in cereal crops and an actual decrease of 10 per cent. in meat-producing animals.

"What to grow and how to market it," he said, are problems for the railroads and the farmer to solve, and they should co-operate to reach the solution. He recommended that farmers study the needs of consumers; that they work for a reputation of high quality of their products, which should be carefully selected and graded before marketing, and he also urged the formation of local associations which would insure the planting of sufficient acreage to make carload shipments of crops a certainty, and thus, by the cheaper transportation so obtained, put the farmers in the closest touch with the markets of the country.

He told of how the peach crop was handled at Horatio, Ark., where 100 cars of peaches had been loaded in one day and not less than 50 carloads every day in the week during the peach season. This was accomplished by close co-operation of the farmers and the railroads, the farmers organizing associations to insure carload shipments and the railroads helping to find a market for the fruit. If cars were loaded to capacity it would greatly help to avoid congestion at terminals in cities where additional space for tracks is frequently impossible to obtain at any price. Consequently the roads are doing all they can to get more freight over their lines in fewer cars. The commercial development department of the Baltimore & Ohio, as well as its interchange commodity bureau specifically, are doing all they can to develop the business of the farmers.

Mr. Blakely also mentioned a pamphlet which his company is distributing. It tells how concrete may be used on farms at low cost and without employing skilled labor. Its advantages in securing sanitation, safety, convenience and durability in various structures are fully explained.

PENNSYLVANIA RAILROAD'S GOOD YEAR

But Company's Report Urges Granting of Higher Rates to Meet Rising Costs.

The annual report of the Pennsylvania Railroad Co. for the year 1916 shows railway operating revenues of \$230,278,533; railway operating expenses, \$166,164,582, and net revenue from railway operations, \$64,113,951; railway operating income after deduction of tax accruals and uncollectible railway revenues (the latter being only \$35,540), \$55,056,011. Adding to this the non-operating income of the company, of which more than \$20,000,000 is income from securities, accounts, sinking and other reserve funds, and over \$2,685,000 rent income, makes the gross income \$78,220,874, which is reduced by deductions to \$52,276,504 net income, the latter being distributed thus: Sinking and other reserve funds, \$2,138,959; dividend of 6 per cent., \$29,952,252; appropriations for road and equipment, improvements, etc., \$12,928,711, leaving balance for the year transferred to credit of profit and loss, \$7,256,581.

This report covers the Pennsylvania Railroad proper; a statement was recently issued covering the entire sys-

tem, which showed that the railway operating revenues for 1916 aggregated over \$441,000,000 for all lines under the control of the Pennsylvania, and the net railway operating revenues more than \$109,000,000.

The report continues, saying that as compared with 1915, the operating revenues increased 17 per cent. and operating expenses 16 per cent., but taxes increased 19 per cent. The net income for 1916 increased \$9,851,181 as compared with 1915.

Emphasis is laid upon the necessity for higher rates for transportation. It is pointed out that while the results for the first eight months of 1916 showed a satisfactory increase, since then the net returns have shown a marked reduction due to higher costs. Increased costs have made heavy inroads into profits, and it is expected that their effect will be more acute in 1917. With widespread and pressing demand for enlargement of facilities it is essential, if they are to be provided, to grant the railroads the higher rates necessary to place them in position to meet rising costs and give them the earning basis to attract new capital for the additional transportation facilities and service so urgently required. The lack of sufficient surplus for many years prevented them from providing such additions and betterments in advance of traffic demands and while labor and material costs were reasonable.

It is noted that the average trainload has increased in the last 10 years from 553 tons to 870 tons, or 57 per cent. The average ton-mile revenue (.603 of a cent) was slightly less than in 1915.

Nearly \$25,000,000 was spent during the year for road and equipment, including the \$12,928,711 mentioned in the distribution of net income. Equipment bought included 264 locomotives, 403 passenger cars and 6252 freight cars.

Poor's Manual of Railroads, 1917.

Poor's Manual of Railroads for 1917 has been issued. It is the fiftieth annual number of this standard reference work, and its early publication this year is due to the energies of the publishers to expedite the compiling of data and also the mechanical operations essential to its production. It contains the statements of railroad companies for the year ended June 30, 1916, and also all important information relating to the roads up to the time of going to press. A prominent feature is the margin of safety over interest and dividend requirements of individual stocks and bonds. All the essential facts appear from which the reader may form opinions, although the book itself does not express opinions as to the value of securities. The bond revisions are very much enlarged and improved as compared with previous issues. This old and reliable publication has been consulted by financial institutions, investment and bankers as well as investors themselves for the entire half century which has made it familiar to them all. It is issued by the Poor's Manual Co., 80 Lafayette street, New York.

Clarksburg Northern Presents Possibilities.

The Citizens' Guaranty & Trust Co. of Parkersburg, W. Va., which recently purchased the Clarksburg Northern Railroad at receiver's sale, says that the line was projected from New Martinsville to Clarksburg, W. Va., but after it was built as far as Middlebourne, W. Va., some 14 miles, the owners were unable to finance it. If extended to either Salem or Clarksburg, where it would connect with the Baltimore & Ohio Railroad, it would go through a rich agricultural, oil, gas and coal region and would be self-sustaining immediately, and eventually quite valuable. If the company cannot interest someone in the completion of the road, it will dismantle the line. The trust company will not operate or extend it.

Maryland & Pennsylvania Report.

The annual report of the Maryland & Pennsylvania Railroad Co. for the calendar year 1916 shows total operating revenue \$489,894, increase as compared with 1915, \$9810; operating expenses \$334,092, decrease \$16,724; net operating revenue \$155,802, increase \$26,534; income available for additions and betterments \$50,148, increase \$36,399, of which there was expended \$49,344. President O. H. Nance says that

the reduction in operating expenses was accomplished without in any way neglecting necessary maintenance of either roadway or equipment. Automobile competition was responsible for a decrease of revenues from passenger traffic, but it is said that passenger revenues may display an improvement this year; at any rate, they are not likely to show any further decrease.

\$500,000 Concrete Railroad Bridge.

W. W. Boxley of Roanoke, Va., has been awarded a \$500,000 contract to build a double-track concrete bridge over the James River on the Richmond Belt Line Railroad for the Richmond, Fredericksburg & Potomac and the Atlantic Coast Line railroads. The bridge will be about 2300 feet long, and will be situated a short distance upstream from the present bridge, which it will replace. Construction is to begin immediately, and it will be under the supervision of J. E. Greiner of Baltimore, consulting engineer. The track level will be 90 feet above the water. The bridge will be of ornamental design, and it will be used in connection with the new Richmond terminal station for which the contract was lately awarded.

New Equipment, Etc.

Atlantic Coast Line has ordered 20 locomotives from the Baldwin Locomotive Works, Philadelphia, including 10 Mikado type, 7 Pacific type and 3 switching locomotives. It has also ordered 12 passenger cars from the Pullman Company, Chicago.

Florida East Coast Railway is reported in the market for 200 steel flat cars.

Southern Railway has received 25 all-steel passenger cars from the Pullman Company.

Louisville & Nashville Railroad will, it is reported, build 6 Mikado locomotives in its own shops.

Baltimore Municipal Railroad has ordered \$50,000 worth of rails from the Bethlehem Steel Co. to complete another section of its waterfront railway.

Midland & Northwestern Railroad, Midland, Tex., is reported in the market for 2 locomotives and several cars.

Rock Island Lines have ordered 20 Mikado type and 10 Santa Fe type locomotives from the American Locomotive Co., New York.

Consolidation Coal Co. has ordered 300 hopper cars from the Pullman Company.

Chicago, Burlington & Quincy Railroad is contemplating the purchase of locomotives.

Norfolk Rates Extended to Other Southern Ports.

Action has been taken by at least one of the railroad companies which may result in a considerable increase of export traffic through Southern cities. The Nashville, Chattanooga & St. Louis Railway Co., of which John Howe Peyton is president, has through its traffic department authorized a basis giving the same export rates from Ohio River crossings to Savannah, Charleston & Brunswick as the rates given to Norfolk.

Similar action by other roads may be taken if expectations are realized, with a result that the congestion existing at North Atlantic ports will be diminished and the railroad freight situation correspondingly relieved so that shipments of foodstuffs will be generally facilitated.

Virginian Railway Elects Officers.

C. W. Huntington has been elected president of the Virginian Railway to succeed Raymond du Puy, resigned, and E. E. Kerwin has been elected vice-president in charge of operation. James Berlingett, assistant general manager, has been appointed general manager, the post of assistant being abolished.

B. & O. Earnings Holding Up.

The statement of earnings and expenses of the Baltimore & Ohio Railroad Co. for January shows operating revenue of \$9,772,353, increase as compared with the same month of last year \$1,328,065; total operating ex-

penses \$7,126,235, increase \$730,924; net operating revenue \$2,646,118, increase \$597,141. The largest increase in the expenses was for conducting transportation, viz., \$546,233, and the next largest was for maintenance of equipment, \$132,199.

For the first seven months of the company's year, which began July 1, 1916, this statement makes the operating revenues total \$71,112,858; total operating expenses, \$50,105,128; net operating revenues, \$21,007,730, or an average of more than \$10,000,000 per month for gross and over \$3,000,000 for net.

Progress of Missouri Pacific Reorganization.

The Kansas & Colorado Pacific Railway, which was sold under the first refunding mortgage, was bought in recently by R. H. Neilson and D. A. Holmes of New York on behalf of the reorganization committee and Kuhn, Loeb & Co. of New York at the upset price of \$9,800,000. This closes the sale of the several properties of the Missouri Pacific system, the other two having been previously purchased by the same parties. It is expected that the reorganization plans will now be promptly fulfilled.

Paris to Palestine, Tex.

J. S. Wolfert of the Wolfert Lumber Co., Calion, Ark., writes the MANUFACTURERS RECORD that he and associates are interested in a plan to build a standard-gauge steam-operated railroad from Paris to Palestine, Tex., about 145 miles. Surveys for the line have been partly made, and it is hoped to begin construction within a few months.

Railroad Notes.

The twenty-fourth annual report of the Chicago Railway Equipment Co. shows in the balance-sheet total assets of \$4,678,068, including capital assets \$2,865,827 and current assets \$1,811,787; undivided profits, \$606,062. Dividends declared during the year and charged to undivided profit account, \$174,020.

DOMESTICATING THE AVOCADO.

Successful Florida Development of a Tropical Food Fruit.

By R. A. ELLIS, Secretary Florida Avocado Co., Tampa, Fla.

One of the most remarkable developments of comparatively recent growth in South Florida is that of the growing of the avocado upon a commercial scale. This fruit is remarkable in several ways; first, in that it is a complete food in itself; second, that it is a most delicious relish served with other foods. Unlike most fruits, it is not sweet, nor is it acid, but has a most deliciously delicate, nutty flavor, and is rich in oil content. Third, it is grateful to and most readily assimilated by the most delicate digestion, being available for such as a complete dietary in itself. Fourth, the avocado is a lusty-growing tree where climate and soil conditions are suitable, as in much of South Florida, and bears prodigious crops of fruit.

While the avocado has been in common use as a food in the West Indies, Mexico and Central and parts of South America for centuries, it was not cultivated in the United States until about 1896, when experiments were made in propagating selected varieties from the wild seedlings by budding, as seedlings do not produce true to the parent trees and are uncertain bearers. The United States Department of Agriculture took the matter up also and established an experimental station at Miami, where the work was carried on in co-operation with a few progressive growers, and it was determined that it was practicable to propagate selected varieties by budding upon seedling stock, much as had been done for many years with the orange, grapefruit and lemon. It was found, however, to be a very much more difficult matter to get the avocado buds to take and grow than it was with the citrus fruits, so that it was an expensive matter to get budded plants; still, several hundred acres were set successfully in budded stock, and the business

secured its first commercial start practically within the last ten years.

By careful experimentation in the matter of budding, the "seed graft" has been developed, the bud being inserted in the sprout from and at the seed, so that it takes the place of the seedling growth from the first and gets the benefit of the great vitality and force of the seed in starting its growth, beginning to bear fruit the second year of its growth. This is a secret process, however, and is known only to a few of the leading growers and requires great skill and care to make it a success.

The profits from the avocado are enormous, reports from bearing groves showing that during the winter of 1916-17 trees four years old netted \$19.93 each for that year's fruit, the prices ranging from \$6 to \$12 per dozen fruits f. o. b. at the grove.

While the avocado is credited with being more easily injured by cold than the citrus fruits, it has been demonstrated that it can be safely as well as profitably grown in South Florida when proper protection is provided against possible severe cold spells that may occur during any winter, as in 1894-5, 1898, 1906, and last, but not least, that of February 2 and 3, 1917, when both old and young trees came through uninjured where properly protected, but were killed or badly injured where this was not done.

The profits on an avocado grove justify the best methods that can be adopted in its culture and protection, actual results from young groves showing net receipts of 75.4 cents per tree for second year after planting, \$4.60 per tree for third year after planting and \$19.93 per tree for the fourth year after planting, indicating a possible revenue of about \$20,000 from an acre grove during the first 10-year period after planting. As these figures are not based upon estimates, but upon actual results for first four years after planting of a young grove, allowing an increase of only 10 per cent. per year thereafter in yield of trees, it would seem to be a reasonable conclusion, and is borne out by reports of older trees, which really justify a more liberal estimate of bearing capacity during later years of growth.

The really wonderful value of the avocado as a food, as well as a delicious fruit, together with the fact that it can be successfully grown only in a very limited area in the United States, insures its always commanding a remunerative price. The supply cannot be increased fast enough to equal the demand for the winter variety, which does not come in competition with the Cuban fruit, which matures only in the summer and fall. The varieties raised commercially in Florida mainly mature after November 1 and through the winter months, when prices are the highest.

In a comparison of the value of the avocado in food value with milk and eggs, the Department of Agriculture published the following analysis in Bulletin No. 77:

	MILK (cow) Per Cent.	AVOCADO Per Cent.	EGGS (whole) Per Cent.
Water	87.0	72.8	73.7
Protein	3.3	2.2	14.8
Carbohydrates	5.0	4.4	0.0
Fats	4.6	17.3	16.5
Ash	0.7	1.9	1.0
Crude Fibre	0.0	1.4	0.0

The amount of both crude fiber and ash present in the avocado are beneficial, the ash containing mineral elements essential to food values, and the fiber giving the digestive organs "something to work on." In this bulletin it is stated that the avocado is equal in food value, pound for pound, with lean meat.

Altogether there is no recent development in Florida (or elsewhere) that will so greatly increase the value and productiveness in food value of the land as that of the avocado, sometimes called the "alligator pear," the botanical name of which is "Persea Gratissima." It is a wonderful gift of nature to man.

For Russia's Needs.

M. WOLCOFF, 1216 Callowhill Street, Philadelphia.

I want locomotives for export to Russia; machinery with daily capacity 500 bushels of starch from potatoes; equipment to manufacture molasses from raw beets; locomotives to be new or second-hand; catalogues to include prices f. o. b. Seattle. American manufacturers may be interested to import following Russian products: Bristles; wool; flax; hides; furs; hemp; horse-hair; platinum; oil.

Good Roads and Streets

SOUTHERN HIGHWAY ACTIVITIES.

Details in regard to road and street undertakings and bond issues, briefly mentioned below, are given under the proper headings in our "Construction Department" and "New Securities," published elsewhere in this issue.

Bonds Voted.

Anderson, S. C.—City voted \$125,000 bonds to pave streets.

Meridian, Miss.—City will issue \$3155.64 for sidewalk paving.

Mountain City, Tenn.—Johnson county voted \$200,000 bonds to improve roads.

Bonds to Be Voted.

Chester, S. C.—Chester county votes March 27 on \$450,000 bonds to construct roads.

Denton, N. C.—Town voted on \$12,500 bonds to pave streets and sidewalks.

Giddings, Tex.—Lee county votes March 20 on \$150,000 bonds to construct roads.

Huntsville, Tex.—Walker county votes April 7 on \$25,000 bonds to gravel or pave roads.

Laurens, S. C.—Laurens county votes March 27 on \$300,000 bonds to construct roads.

Contracts Awarded.

Beeville, Tex.—City awarded contract for 25,000 square yards paving and 1500 feet concrete curb; cost \$48,000.

Perry, Fla.—Taylor county awarded contract for constructing 87 miles of highway.

Contracts to Be Awarded.

Baltimore, Md.—City receives bids until March 14 for 35,000 square yards sheet asphalt paving, 20,000 linear feet armored concrete curb and circles, and 25,000 cubic yards grading.

Centerville, Tenn.—Hickman county asks bids until March 30 for road improvements, including grading about 40 miles road, etc.

Danville, Ky.—City will construct brick, sheet asphalt or wood-block streets at cost of \$25,000 to \$75,000.

Edna, Tex.—Jackson county receives bids until March 12 to construct 11.2 miles of road, 8.6 miles of outlets, 2 miles of hard surfacing and 5 miles of fencing.

Frederick, Okla.—City will soon ask bids to construct 52 blocks paving.

Suffolk, Va.—City will pave sections of several streets with concrete; estimated cost \$18,946.

North Carolina Planning Aggressive Road Work.

Raleigh, N. C., March 5—[Special.]—The Legislature has authorized a score or more of counties which have not gone into the good-roads business to issue bonds for this purpose, the largest amount to any one county being \$500,000 in Robeson. It gives authority to townships in a general bill to vote bonds for railways and roads.

The State Highway Commission is given full authority to co-operate with the United States Secretary of Agriculture in the construction and the maintenance of public highways. For the first time the Legislature underwrites the bonds of counties issued for road building, of a character approved by the State Highway Commission, so that the money can be secured at 5 per cent., and \$80,000 will be available each year in this way, the bonds to be serial and the last one maturing in 30 years. Guideposts are by a new law required on each highway, and a large number of village charters are repealed so that the highways can no longer be "held up" by these so-called towns, which did nothing in the way of improvements.

The Legislature enacted a rather novel but extremely useful law for one of the extreme western counties, Mitchell, this requiring the county commissioners to purchase a pure shorthorn bull for each township.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Cherokee Spinning Mill.

Contract has been awarded to the Gallivan Building Co., Greenville, S. C., to build the Cherokee Spinning Co.'s one-story 207x132-foot brick construction mill with steel sash. This structure will be equipped with 5000 spindles and accompanying machinery, as lately announced, the architect and engineer in charge being J. E. Sirrine of Greenville. The Cherokee Spinning Co. is of Knoxville, Tenn., and organized with a capitalization of \$150,000. M. B. Melendy is president.

Textile Notes.

The Bismarck Hosiery Mill, Carthage, N. C., has been incorporated with \$50,000 capital by J. R. McQueen, D. A. Blue, P. R. Kennedy and Mary B. Caine.

The E. H. Emory Company, East Durham, N. C., has organized to establish knitting mill recently mentioned. This plant is to have 24 knitting machines, with electric-power drive, and the management wants prices on the equipment. E. H. Emory is president and C. L. Higbee is secretary-treasurer.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Machinery, Tools, Etc., for Spain.

RAMON SANCHEZ DIAZ, Bilbao, Spain.

I have corresponded with you for a long while, and you have given me notices in regard to getting goods from America. But now the war continually interferes with our business, although we had some trouble in dealing with foreign countries even before the war. I wish to get into communication with houses exporting sheet iron, plain or galvanized; steel for tools and other purposes, machinery for working iron and plumbagos. If you know of any reliable dealer you might say to him that old galvanized iron and steel for tools and other purposes are wanted by me.

Machinery Wanted in Argentina.

CAMPBELL-HUMPHREYS, TALBOT & TROISE, Calle Salguero 260, Buenos Aires, Argentina.

We have friends interested in purchasing modern equipment for wood-cutting, woodworking and log-cutting, including rapid cylinder machines and multiple bladed machines; cast-iron soap boilers; soap-cutting machinery; soap-stirring machinery; cast-iron soap molds; equipment for high-class furniture-making; drilling and dowsing tools. Ask manufacturers to forward illustrations, prices, terms conditions, approximate time of delivery after receipt of order, etc. It is essential that we have as much information as possible, as the distance is so great and it takes so long to correspond that valuable time will be lost if we do not have full particulars before us.

Druggists' Specialties for Chile.

GEVERT & CIA, Santiago de Chile.

We are interested to represent American manufacturers, and would be obliged if you could file our name in your information department. We do not make any business for our own account. We would appreciate any remarks about us you may think fit to publish in order to open the way for further business connections. Especially interested in articles for drug stores; chem-

icals; pharmaceutical specialties; herbs; rubber articles; dye materials; chemicals and raw materials for industries; outfits and instruments for hospitals and dentists, etc. Samples, prices and printed matter desirable; correspondence in English; cable address, Gevertco, Santiago; cable code in use, A B C, fifth edition. Business done only as agents, wholesale.

For Sales in Spain.

BLEECKER EXPORT & TRADING CO., 22 Albany Street, New York.

Our agent for Spain, Evaristo J. Rodes, 102 Paseo de Gracia, Barcelona, requests the favor of advising manufacturers that he will be glad to act for them if disposed to make him their agent for the Spanish peninsula for sales on account of the manufactures on a commission basis. Mr. Rodes is our confidential agent, and we know him to be a most honorable gentleman of high character. Especially interested in: Aluminum and its manufactures; nickel and its manufactures; cotton; waterproof textiles; artificial leathers; shoe leathers; fancy leather; sole leather; rubber soles; writing and printing paper; rubber goods; fancy buckles; fine wood for making furniture; barrel stave; hardware in general and for household purposes; sheet rubber for manufacturers; steel in ingots; linen thread; silk and artificial silk thread; silk textiles and raw silk; hosiery of pure silk and of artificial silk.

For Foreign Representation.

CHARLES D. VAN RYN, Agent of Maintz & Co., Paris, Amsterdam, etc., 233 Broadway, New York.

Please note that I am acting as agent for Maintz & Co. and the Amsterdam Kantoor voor Indische Zaken, doing import and export business on a large scale from and to the Island of Java, Dutch East Indies.

Spain Wants Copper Machinery, Etc.

JOSE MARIA QUIJANO, Forjas de los Corrales de Buelna, Provincia de Santander, Spain.

We are interested in learning the addresses of factories which build machinery for working up copper into all the diverse forms in which we see it every day. Especially we wish to get into communication with makers of steel drawplates for soft steel wire ("Martin Siemens"). The drawplates must be from 15 to 40 C. M. long, 4 to 15 C. M. wide and from 2 to 5 C. M. thick. There must be a definite number of openings "agujeros," perfectly free, to take soft steel wire, cold.

MODERN EXAMPLE OF SCHOOLHOUSE CONSTRUCTION SOUTH.

An example of present-day school building in the South is shown herewith in illustration of a public school now under construction at Harriman, Tenn. The main building is 204x75 feet, and contains 20 classrooms, study hall, two playrooms 20x74 feet, library, office and other rooms. The auditorium annex in the rear is 70x100 feet, with a seating capacity of 1000,

while the gymnasium under the auditorium is 40x70 feet, 18 feet high. The building will be equipped with shower baths, plenum heating and ventilating system, unilateral lighting, vacuum cleaning plant, etc. Plans and specifications were prepared by Manley & Young, Knoxville, Tenn., and Lexington, Ky., and its cost, complete, will be \$50,000.

Australian Needs in Manufactures.

WILLIAM G. LANDGREN, Coolamon, N. S. W., Australia.

I am opening at Sydney, in March, a business of importing machinery, novelties, dairy utensils, poultry specialties, hardware of superior make, garden tools, chemical disinfectants and fly destroyers, electrical specialties, oil engines, belting and conveyors, automobiles and automobile supplies, air pressure water systems, ice machines, water filters, pulleys, whips, leather goods, elevators, dumbwaiters, mail chutes, brick machinery, roofing of all kinds, wire ropes, steam engines, automobile trucks, steel beams, standpipes and towers, concrete mixers, hoists, cement machinery, moving-picture machines, hydraulic pumps, well-drilling machinery and tools, hardware and saddlery and superior harness. I shall also act as agent and broker for manufacturers of the above lines. All live houses invited to write.

Letter from Montevideo.

MANUEL FRAGA, Montevideo, Uruguay.

Articles that I can export: Remnants of wool; wool mixed; cotton goods in assorted colors—black, blue and white. Also washed and unwashed wools, hides of wild animals, of cattle and of horses. All for account of firms of your country which are interested in this market (Montevideo) and in Buenos Aires. Articles which I am interested in importing from your country: Hardware; trimmings and all kinds of metal goods for furniture; hinges; handles; grips; dry goods in general; gold leaf, real and imitation; bronze powder. In general, I will accept agencies for any articles that are worth while.

Holland Wants Electrical Specialties.

NAAMLIOOZE VENNOOTSCHAP, Technische Handel Maatschappij voorheen Jan Mulder, Keizersgracht 422, Amsterdam, Holland.

We are in the market for electric heating and cooking apparatus, iron, etc. Ask American manufacturers to send catalogues, with prices and highest discounts, packing included, for delivery f. o. b. New York. We pay cash against documents in New York, and can give American references.



\$50,000 SCHOOL BUILDING AT HARRIMAN, TENN.

MECHANICAL

Byers Auto-Cranes and Their Use.

The accompanying illustration shows one of the Byers auto-cranes manufactured by the John F. Byers Machine Co. of Ravenna, O., in operation at the stone quarry of A. Courchesne at El Paso, Tex., whose total equipment consists of fifteen 1½-yard stone skips, two 3½-ton Velie trucks made by the Velie Motor Vehicle Co., Moline, Ill.; three 3-ton back-dump wagons, three Ingersoll jack-hammer drills, made by the Ingersoll-Rand Company, New York; two large tripod Ingersoll drills and the Byers auto-crane.

The daily capacity of the quarry with this equipment is 500 tons and the loading cost with the Byers auto-crane is 2 cents per ton, the hauling cost by motor truck 4 cents per ton, the average haul being one-quarter of a mile, and the hauling cost per ton in dump wagons 7 cents per ton, the average haul being the same.

The Model C, 1917, is the latest of the Byers auto-cranes, which the company styles "The Giant Laborer That Never Quits You." It is stated that the auto-crane equals 20 men at a small operating cost; it is a lighter, cheaper and simpler locomotive crane which goes any place that a motor truck will go. Further described by the manufacturer, this auto-crane, "like the humble mule, is a hybrid—a cross between a locomotive and a motor truck, with all the advantages apparent in that combination. In other words, it is a small, compact, high-powered steel derrick that travels readily on the ground to any place it is needed."

These machines are shipped entirely set up and ready to work, but the boom and the wheel are removed. It is easily shipped from one job to another by either railroad, wagon road or street, as its dimensions are such that it comes wholly within railroad and highway clearances. All of its operations are controlled by one operator at one position, and it would be hard to name a branch of heavy contracting or industrial work where it would not be a valuable worker. In fact, it does such a variety of work that it need never be idle.

The specifications of Model C auto-crane, which resembles Model B, although having, it is stated, 50 per cent. more power and speed, and various improvements, are: Length, 17 feet 10 inches; width of car body, 6 feet 6 inches; width outside of wheels, 10 feet and the forward and rear wheels track. Height from the ground to the top of A frame sheave is 12 feet 6 inches. The boom and the stack are easily removed for close clearances. Width outside outriggers, 19 feet. Any three-quarter-yard clamshell bucket weighing less than 2400 pounds may be used for car unloading, or one-half-yard bucket for excavating. Maximum operating radius, 20 feet. Additional height secured by longer boom when used as derrick with lighter loads. Capacity as derrick,

4500 pounds; length of boom, 30 feet; weight without bucket, 11 tons; propelling speed forward or reverse, 200 feet per minute.

Power plant consists of Byers special heavy twin vertical locomotive crane-type engines guaranteed 25 horsepower, and a steam boiler. Steam is recommended, but the crane can be furnished with electric or gasoline engine when conditions demand. Further particulars are given in Bulletin 1007 of the manufacturer, which contains a number of illustrations showing auto-cranes at various kinds of work.

New Five-Ton Motor Truck.

The Federal Motor Truck Co. of Detroit, Mich., according to announcement just made by M. L. Pulcher, vice-president and general manager, is now manufacturing a new five-ton model truck. Previous to adding this machine to its line of trucks the company thoroughly tested it by driving thousands of miles over all sorts of roads and also up severe grades, so that the try-out might be of the most complete character.

One of these tests was a trip of 1176 miles, on which the five-ton truck was loaded with sand and driven from Detroit to Pittsburgh and then it was driven back to Detroit, covering roads of three States—Pennsylvania, Ohio and Michigan—in the run. The trip to Pittsburgh was made via Toledo, Cleveland and Canton, O., and Beaver Falls, Pa. Then for three weeks the truck did Titanic tasks up the well-known grades in Pittsburgh, these being tests under the most strenuous conditions. On the way home the run was via Beaver Falls, Youngstown, O., and Cleveland, five days being consumed in the journey, because demonstrations were made in various towns and cities where the company is represented.

The mechanical features of the new model, which is a larger edition of the well-known 3½-ton Federal truck, include, of course, the worm drive rear axle used on all models made by the company for the last three years, heavy motor with five bearing crankshaft of nickel-chrome steel, force feed lubrication operated at a pressure of 150 pounds, feeding all bearings, including the piston wrist-pins. An enclosed dry-plate clutch,

very easily operated, connects the motor with a four-speed transmission mounted "amidships," and this, in turn, is connected with the rear axle worm shaft by a tubular propeller shaft with massive enclosed universal joints. Springs of strong chrome vanadium steel, radius rods and hollow spoke steel wheels are special features of the chassis, which is exceptionally easy riding and conveniently operated.

To make the test the chassis was provided with a steel hydraulic dump body, which, filled with sand, made a total load of 20,000 pounds, and the manner in which the motor handled this load on the severe grades was most gratifying to the Federal engineers.

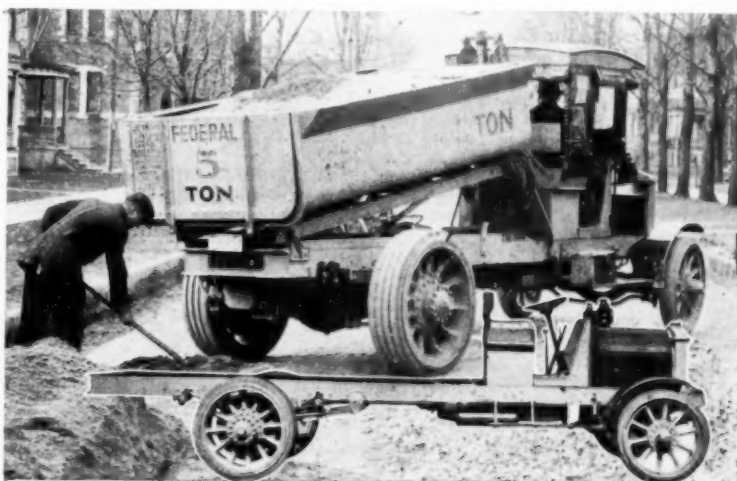
The accompanying illustration shows the new five-ton truck, with the hydraulic dump body, and in position with respect to one of the smaller-sized trucks, so that the difference between the two models may be easily seen and understood.

Mr. Pulcher says that the Federal company distributors have anticipated production on this big new truck by placing orders in large numbers. "We look forward," said he, "to a great increase in business with the addition of the new five-ton model to our line of trucks."

For Venezuelan Trade.

EDUARDO LESEUR, Maracaibo, Venezuela.

I acknowledge receipt of your periodical, which we feel is of great commercial importance. We find markets for every kind of manufactured goods, and our division of agencies gives facilities of all kinds to detail



NEW FIVE-TON FEDERAL MOTOR TRUCK.

commercial work, and with samples on hand makes sales much easier.

In consequence of our custom-house tariff, which is very exacting and tedious, one must see the goods, learn of what constructed, in order to make out a consular manifest in due form without running risk of fines and other contingencies.

The American merchant pays scant attention to that unavoidable condition and thinks samples unnecessary, thus forcing the dealers to whom he introduces his goods to be satisfied with mere details only; under these circumstances, if we succeed in doing a fair amount of business, it is certain, with out special interest in making sales and with the facilities we offer, and with more favorable conditions our firm can command more important trade.

Messrs. R. G. Dun & Co. and the National Association of Manufacturers of New York will furnish full information as to our commercial and financial standing.

Locomotives, Rails, Piping, Etc., for Russia.

M. WALKOFF, 1216 Callowhill Street, Philadelphia, Pa.

I have inquiries from Russia for: Locomotives and railroad track, width between wheels of locomotives to be 750 millimeters (about 20 inches); new and second-hand; railroad supplies, bolts, plates, frogs, switches, crossovers, clamps, etc., for new factory railway; water pipes, for use on farm, to extend 20 miles; would like illustrated catalogues with price-list f. o. b. New York; steam boiler and power presses, for pressing straw and hay, price to be \$425 to \$600 f. o. b. New York.



BYERS AUTO CRANE AT WORK IN STONE QUARRY.

Construction Department

IN ORDER TO FOLLOW UP

Properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be written on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the post-office will generally be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur, as our reports are often published before new companies are known and before they have any established office for the receipt of mail.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

DAILY BULLETIN

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year.

All advertising contracts in the Manufacturers Record for three months or longer include a subscription to the Daily Bulletin for the contract period, as well as a subscription to the Manufacturers Record.

BRIDGES, CULVERTS, VIADUCTS

Ky., Flat Lick.—Knox County will construct steel bridge across Cumberland River; County Commrs. receive bids until Mch. 14; separate bids for superstructure and substructure; also bids until Mch. 14 to construct approach of Big Richland Rd. to Little Richland Rd. (See Machinery Wanted—Bridge and Road Construction.)

Ky., Somerset.—Pulaski County Fiscal Court will construct 2 steel bridges across Pittman Creek—one on Monticello Rd., one on Mt. Vernon Rd.; Monticello Rd. bridge comprising one 100-ft. steel span and two 80-ft. steel spans; Mt. Vernon Rd. bridge, 80-ft. steel span; bids until Mch. 27; W. C. Cundiff, Rd. Engr. (See Machinery Wanted—Bridges.)

La., New Orleans.—Louisville & Nashville R. R., W. H. Courtenay, Ch. Engr., Louisville, Ky., contemplates expending \$4,000,000 in protecting its tracks along Gulf coast between New Orleans and Pascagoula; plans are understood to provide for reconstruction and raising above high sea level of every bridge now in service along Mississippi Sound.

Md., Georgetown.—State Roads Com., 601 Garrett Bldg., Baltimore, let contract to R. G. Collins, Jr., Contracting Engr., 52 Vanderbilt Ave., New York, for constructing bridge proper, including concrete approaches up to draw span; bridge across Sassafraz River between Georgetown and Fredericktown; cost \$50,000; reinforced concrete construction; 780 ft. long; 25 ft. wide; Strobel Steel Construction Co., Chicago, has contract for steel draw. (Lately noted.)

Okl., Eufaula.—McIntosh County Commissioners, Eufaula, and Pittsburg County Commrs., McAlester, Okla., plan to construct bridge across Canadian River between 2 counties; reinforced concrete; estimated cost \$150,000.

Tenn., McGhee.—Fort Loudon Bridge Co. organized to construct bridge across Little Tennessee River.

Va., Christiansburg.—Montgomery County will construct steel bridge 63 ft. long over Mill Creek; County Clerk receives bids until Mch. 20; G. P. Coleman, State Highway Commr., Richmond, Va. (See Machinery Wanted—Bridge Construction.)

Va., Richmond.—Richmond, Fredericksburg & Potomac R. R. (S. B. Rice, Engr. M. W. Richmond) and Atlantic Coast Line Ry. (J. E. Willoughby, Chief Engr., Wilmington, N. C.) let contract W. W. Boxley of Roanoke at about \$500,000 to construct double-track concrete arch bridge across James River to replace present Belt Line structure; new bridge will be 2300 ft. long with track level 90 ft. above river; J. E. Greiner & Co., 1319 Fidelity Bldg., Baltimore, will supervise construction. (Noted in Jan.)

Va., Warm Springs.—Bath County Commissioners let contract Champion Bridge Co. of Wilmington, O., at \$3661 to construct bridge at Thompson's Creek and one at Lick Run to cost \$1659.

CANNING AND PACKING PLANTS

Ala., Birmingham.—F. L. Wade and associates contemplate increasing capacity of cannery.

Ala., Pleasant Hill.—Farmers' Co-operative Assn., E. C. Kelly, Prest., will install cannery.

Fla., Apalachicola.—Acme Packing Co., C. L. Shephard, Gen. Mgr., lately noted letting building contract to Geo. R. Marshall, will erect 80x115-ft. ordinary construction building; cost \$5000; purchased machinery, cost \$3000; products, shrimp and oysters, steamed; daily capacity, 1000 2-doz. cases.

Fla., Dade City.—Pasco County Fair Assn. will build packing plant for fruits and vegetables.

S. C., Greenville.—Piedmont Packing Co., W. H. Austin, Prest.-Treas., has plans by Packers' Architectural & Engineering Co. of Chicago for meat-packing plant. (Reported in Sept. as organized.)

S. C., Orangeburg.—Orangeburg Packing Co. let contracts, including all buildings and machinery, for \$200,000 plant to kill and pack meat; daily capacity 500 hogs and 150 cattle; main building of reinforced concrete and brick, 200x80 ft.; mechanical equipment includes packing-house machinery, electrical generator, electric motors, boilers, engines, etc.; building contract to McKenzie Building Co., Augusta, Ga.; packing-house equipment to Brecht Co., St. Louis; other equipment to 8 different contractors; Archts. and Engrs., Wilson &

Sompayrac, Palmetto Bldg., Columbia, S. C., and Packers Architectural & Engineering Co., Manhattan Bldg., Chicago. (Lately detailed, including invitation for bids.)

Tenn., Morristown.—Davis, Dougherty & Goodson organized to establish packing plant for tomatoes, corn, etc.

Tenn., Morristown.—Davis, Dougherty & Goodson, organized by F. P. Goodson of Morristown, E. A. Davis, A. H. Dougherty and W. A. Dougherty of Russellville, Tenn.; build cannery with daily capacity 2 carloads canned products.

Tenn., Nashville.—H. P. Fritz of H. P. Fritz Co. will install sauerkraut plant; contracted for machinery.

W. Va., Huntington.—Fesenmeier Packing Co. increased capital from \$25,000 to \$50,000; install additional equipment and enlarge cellar space at 14th Street packing plant; plans 100 per cent. increase in capacity.

CLAYWORKING PLANTS

Md., Baltimore.—Silica Firebrick, etc.—American Refractories Co., B. B. Mossman, Treas., writes to Manufacturers Record: Our Baltimore plant buildings will be entirely fireproof; steel and brick construction; plans and design by our own engineering department. (Lately noted letting contract to Austin Construction Co., Cleveland, Ohio, to build 1-story brick and concrete plant structure and as to build series of kilns. Emil Winter, Pittsburgh, Prest. American Refractories Co.)

Tenn., Chattanooga.—Firebrick.—Banks-Mitchell Co., capital \$5000, inceptd. by L. A. Banks, Lon W. Mitchell, A. Shalliday and others.

COAL MINES AND COKE OVENS

Ala., Cordova.—Cordova Fuel Co., capital \$7000, inceptd. by C. S. Bissell, R. H. Palmer, M. O. Davis and others.

Ark., Alix.—Semi-Anthracite Fuel Co., capital \$10,000, inceptd. by Edward M. Douthat of Alix, John M. Ketchersid of Hope, Kans., and Grant Stauffer of Kansas City, Mo.

Ky., Gatlin.—Archer Blue Gem Coal Co. organized; W. M. Archer, Prest.; S. R. Wortham, V.-P.; B. M. Archer, Secy.-Treas.; S. C. Davenport, Mgr.; will develop 167 acres; daily capacity 100 tons.

Ky., Jackson.—Jackson Black Coal Co., capital \$12,000, inceptd. by H. D. Baker, W. H. Pursifull, Lewis Hays, Jr., and G. M. Center.

Ky., Louisville.—Iroquois Coal Mining Co. increased capital from \$35,000 to \$40,000.

Ky., Middlesboro.—Orby Coal Co., capital \$4000, inceptd. by U. Pardinal, J. D. Yarbrough, J. Stanley and H. C. Chappell.

Ky., Pineville.—Geisler Coal Co., capital \$1500, inceptd. by J. H. Bolton, John Geisler and J. S. Redding.

Tenn., Harriman.—Mt. Carbon Coal Co., capital \$15,000, inceptd. by G. W. Chandler, R. K. Hill, L. O. Scott and others.

Va., Honaker.—Russell Coal Corp., capital \$10,000, chartered; J. H. A. Smith, Prest., Blackford, Va.; Aaron Russ, Secy., Honaker.

Va., Honaker.—Tarklin Coal Co., capital \$15,000, inceptd.; B. F. Thompson, Prest.; C. W. Fuller, Secy.-Treas.

Va., Tazewell.—Banner Raven Coal Corp., capital \$50,000, chartered; J. S. Gillespie, Prest.; Geo. C. Peery, Secy.

Va., Tazewell.—Laurel Coal Corp., capital \$20,000, chartered; A. P. Perley, Jr., Prest., Putnams, Va.; C. B. Neel, Secy., Raven, Va.

W. Va., Besoco.—Fire Creek Smokeless Fuel Co., E. C. Taylor, Prest., plans development of 1800 acres coal lands in Raleigh County.

W. Va., Charleston.—Blue Knob Coal & Coke Co., capital \$15,000, inceptd. by C. E. Lewis, Wm. Carson, H. M. Carson and others.

W. Va., Fairmont.—Monongahela Valley Traction Co. plans to manufacture coke and by-products; E. B. Moore, Gen. Mgr., writes to Manufacturers Record: Expect to build by-product coke oven plant and likely some producer plants for utilization of coke from by-product oven plant; details not in definite form; Sanderson & Porter, Engrs., New York, engaged in making up report with definite recommendations.

W. Va., Huntington.—Chloe Coal Co., capital \$50,000, inceptd. by H. H. Morris, G. D.

Miller, Frank Ellington and others; officers not yet elected; develop 10,000 acres; date of opening machinery bids not set; probably begin operation next fall.

W. Va., Montgomery.—Empire Colliery Co., capital \$25,000, inceptd. with C. D. Lutz, Prest.; O. C. Huffman, V.-P.; both of Huntington, W. Va.; Aaron Carver, Secy. and Gen. Mgr., Montgomery; develop several hundred acres coal land.

W. Va., Morgantown.—Randall Coal Co., capital \$50,000, inceptd. by E. M. Every of Morgantown, Jas. L. Rush, H. Jarvis Elrod and others of Waynesburg, Pa.

W. Va., Yukon.—Sayers Pocahontas Coal Co., lately noted (under W. Va., Bluefield), organized, capital \$100,000, will at present develop about 113 acres; C. H. Harman, Tazewell, R. 2, Prest. and Mgr.; S. M. R. Coulling, V.-P., and H. P. Brittain, Secy.-Treas., both of Tazewell, Va.

W. Va., Wheeling.—Pittsburgh-Wheeling Coal Co., capital \$100,000, inceptd. by J. H. Reich, E. K. Ahren, J. G. Sharp and others, all of Parkersburg, W. Va.

COTTON COMPRESSES AND GINS

Tex., El Paso.—Chas. Davis will install cotton gin.

COTTONSEED-OIL MILLS

La., Shreveport.—Henderson Oil Mill Co., capital \$400,000, organized with R. W. Henderson, Prest., Talladega, Ala., and M. C. Stockbridge, V.-P. and Gen. Mgr., Ruston, La.; consolidates plants as follows: El Dorado (Ark.) Cotton Oil Co. of El Dorado; Warren (Ark.) Ice, Cotton Oil & Fertilizer Co.; Vidalia (La.) Oil Mills; Ruston (La.) Oil Mill & Fertilizer Co.; Gibland (La.) Oil Mill & Fertilizer Co.; Vidalia Mill also operates ice factory; various companies operate cotton gins in connection with or near oil mills; acquired 10-acre tract near Shreveport on which will erect 12-press cottonseed oil mill with daily capacity 200 tons seed and estimated to cost \$120,000. (Lately noted.)

Tenn., Memphis.—Crescent Cotton Oil Co. inceptd. by A. Boyd, L. R. Boyd, Mrs. Mary Boyd and others.

DRAINAGE SYSTEMS

S. C., Charleston.—Sanitary and Drainage Com., Room 401 Peoples Bldg., will lengthen under-drains and erect head walls on main highway in St. Andrew's Parish, 3 or 4 mi. from Charleston; bids until March 14. (See Machinery Wanted—Drainage System.)

S. C., Yonges Island.—Ashepool Farms Corp. plans extensive improvements to reclaim 18,000 acres land; John W. Genay, Prest., advises Manufacturers Record: Not quite ready to disclose plans.

ELECTRIC PLANTS

Ark., Batesville.—City contemplates improving electric-light plant and water-works. Address The Mayor.

Ark., Paris.—City is having preliminary surveys made for installation of electric-light plant and water-works; Winters & Dove, Engrs., Fort Smith, Ark.

Ark., Stephens.—J. R. Whaley will build electric-light plant.

Ga., Atlanta.—Georgia Southern Utilities Corp. will issue \$15,000 additional capital and \$1,000,000 first mortgage bonds, of which it is proposed to issue \$65,000 for contemplated improvements and purchase of new property.

Ga., Emerson.—Georgia Ry. & Power Co., Atlanta, Ga., will install power station and construct electric transmission lines to furnish power for industrial enterprises in Emerson Dist.

Ga., Thomasville.—City contemplates bond issue to improve electric-light plant. Address The Mayor.

Ky., Murray.—City, Henry E. Holton, Mayor, asks bids until Mch. 29 to construct electric-light system and water-works improvements; electric system includes furnishing alternators, switchboard, street-lighting equipment, wire, poles and line material; Xavier A. Kramer, Magnolia, Miss., Consult. Engr. (See Machinery Wanted—Water-works and Electric Lights.)

Ky., Paducah.—City engaged F. G. Probst and A. L. Dabney, Engrs., Memphis, Tenn.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

to prepare plans for enlarging electric-light plant. Frank N. Burnas, Mayor. (Noted in Dec. to enlarge plant.)

Ky., Walton.—E. L. Kelly will rebuild burned electric-light plant.

Mo., Sparrows Point.—United Railways & Electric Co., A. Wolff, Supt. Motive Power, Continental Bldg., Baltimore, is having plans and specifications prepared in own office for lately-noted sub-station; 50x75-ft. ground plan, single story, reinforced concrete; will contain three 1500 K. W. rotary converter units and one 250 K. W. booster set.

Mis., Columbus.—Columbus Ry. Light & Power Co. will install 1000 H. P. steam turbine, which will double output of plant.

Mo., Clarkton.—Louis Dunn purchased electric-light plant; understood to enlarge and improve.

Mo., Harrisonville.—L. K. Green & Sons of Pleasant Hill, Mo., plan to supply electricity in Harrisonville from plant at Pleasant Hill.

Mo., Kirksville.—North American Securities Co. contemplates improvements to electric-light plant; supply electricity to small towns between Kirksville and Booneville.

Mo., Springfield.—Federal Light & Traction Co., A. F. Van Deine, Local Mgr., will build additional plant; cost \$250,000; Sanderson & Porter, Engrs., 52 William St., New York.

Okla., Bartlesville.—Mid-Co Gasoline Co. is reported as contemplating erection of plant to furnish light, power and heat for Oklahoma oil fields.

Okla., Billings.—City engaged Mackintosh-Walton Engineering Co., 1023 State National Bank Bldg., Oklahoma City, as engineer for electric-light plant, sewer system and water-works; cost \$50,000; will vote on bonds. (Lately noted.)

Okla., Clinton.—City contemplates installation of ornamental lighting system on 10 blocks and rebuilding of power transmission lines; N. E. Stone, Supt.

Okla., Frederick.—City votes Mch. 20 on \$100,000 bonds for light, water and sewer systems construction. Address The Mayor.

Okla., Frederick.—City votes Mch. 20 on bonds for purchase and improvement of Foster-Harris Gin & Electric Co.'s electric-light plant and extension of water-works; J. O. Morris, City Clerk. (See Water-works.)

Okla., Grandfield.—Maple & Green will rebuild electric-light and ice plant reported burned.

Okla., Mill Creek.—City is considering installation of electric-light system. Address The Mayor.

Okla., Oklahoma City.—Central Oklahoma Light & Power Co., capital \$100,000, inceptd. by Geo. M. Green, H. L. McCracken and L. Smille.

Okla., Sallisaw.—City contemplates installing 500 K. W. generating unit and boilers in electric-light plant; Geo. E. McCants, Gen. Mgr.

S. C., Saluda.—Public Service Corp. is improving electric-light system. (See Ice and Cold-storage Plants.)

W. Va., Matewan.—Matewan Light & Power Co., capital \$25,000, inceptd. by G. T. Blankenship, Jr., of Matewan; C. M. Gates, W. O. Hay and C. R. Gates of Sprigg, W. Va.

W. Va., Shinnston.—Shinnston Power & Light Co., capital \$15,000, inceptd. by Aura R. Walls, John B. Wyatt, Mae Walls and others.

FLOUR, FEED AND MEAL MILLS

Ala., Eufaula.—J. P. Foy, Prest. Commercial National Bank, will install feed mill.

Ga., Hawkinsville.—C. C. Atkinson and N. P. Miller will build feed and grist mill; daily capacity 10 tons feed.

Okla., Vinita.—R. H. Glennon Elevator Co. is reported to build \$10,000 mill.

Tenn., Cleveland.—Cleveland Milling Co. will rebuild plant lately noted burned; placed order for additional machinery, cost \$4000, to increase capacity.

W. Va., Chester.—Paulk Bros. Co., capital \$5000, inceptd. by Jeremiah McMillan of Chester, S. J. Faulk and Wm. T. McNutt of East Liverpool, Ohio, and others.

FOUNDRY AND MACHINE PLANTS

Ala., Birmingham.—Gas Appliances.—Birmingham Gas Appliance Co., capital \$2000, inceptd. by W. L. Bagley, Prest.; F. S. Hamill, V. P. and Treas.; E. N. Hamill, Secy.

Mo., Baltimore.—Gas Appliances.—Baltimore Gas Appliance & Mfg. Co., Bayard and Severn Sts., has acquired and consolidated

General Gas Appliance Co. and Schmitt Mfg. Co., both of New York; plans contemplate enlargement of Baltimore plant to double present capacity and purchase of additional land to provide for future increase.

Mo., Salisbury.—Machinery, etc.—R. D. Grier & Sons Co., capital \$50,000, inceptd.; Robt. D. Grier, Prest.; Ralph H. Grier, V. P. and Mgr.; Alex. T. Grier, Secy.; continues established machine works formerly conducted as partnership. (See Machinery Wanted—Boring Machine.)

Tenn., Chattanooga.—Gas Ranges, etc.—Vesta Gas Range & Mfg. Co., lately reported to erect addition, states does not contemplate addition to plant in near future.

Tenn., Chattanooga.—Malleable-Iron Castings.—Ross-Meehan Foundries, G. F. Meehan, Prest. and Mgr., has plans by J. D. Alsop, Chattanooga, for lately-noted annealing plant; mill construction; 200x140 ft.; cost \$22,000; contract awarded; D. F. Brand, Mission Ridge, Tenn., Route 1, Constr. Engr.; contract has been let for annealing ovens; manufactures malleable-iron castings.

Tenn., Covington.—Plows.—Covington Mfg. & Automobile Co. will increase capacity from 40 to 100 plows daily. (Under Motor Cars, Garages, Tires, etc., lately noted as increasing capital, and to erect 64x150-ft. ordinary-construction building, work to be done by the company.)

Tenn., Kingston.—Iron Pipe.—McWane-Tennessee Cast Iron Pipe Co., capital \$100,000, is reported as being organized by Polk Tarwater and F. W. Climer of Kingston, J. M. Baker of Harriman, Tenn., and John T. McWane of Lynchburg, Va.; build plant to manufacture cast-iron pipe.

Tex., Beaumont.—Rotary Drilling Machinery.—Beaumont Iron Works Co. increasing capital from \$100,000 to \$225,000; contemplates enlarging plant.

Tex., Beaumont.—Steel Castings, etc.—Beaumont Iron Works Co., L. J. Black, Prest., and C. B. Sheeks, Secy., increased capital stock from \$100,000 to \$225,000; will make improvements, including erection of plant for manufacture of steel castings; cost of improvements, \$65,000; now operating forging shop, gray iron and brass foundry and machine shop; will install equipment. (See Machinery Wanted—Foundry and Machine Shop Equipment.)

Tex., Dallas.—Dauch Mfg. Co., Sandusky, O., advises Manufacturers Record that company lately noted inceptd. at Dallas, capital \$20,000, will operate as sales company for Sandusky Tractor. (See Motor Cars, Garages, Tires, etc.)

Va., Bristol.—Boilers.—Twin City Boiler Works, capital \$15,000, inceptd.; J. G. Tilley, Prest.-Treas.; W. R. White, V. P.; W. L. Griffin, Secy.; leased building; will install equipment to manufacture boilers, tanks, stacks; also boiler, locomotive and furnace repair work. (See Machinery Wanted—Punch and Shear; Air Compressor.)

GAS AND OIL ENTERPRISES

Ky., Ashland.—Green Oil & Gas Co., capital \$15,000, inceptd. by W. W. Green, G. W. Ginther and D. V. Lagrew.

Ky., Irvine.—Midcontinent Oil Co. organized by H. F. Sinclair, Tulsa, Okla., and others; will construct tankage farm of 1,500,000 bbls. capacity; plant to comprise 30 tanks, 55,000 bbls. capacity each; also install pipe lines; improvements to cost \$2,500,000 or more; purchased site of 150 acres; company reported to capitalize at \$2,500,000, with headquarters at Irvine and branch office at Winchester, Ky.; H. F. Sinclair's New York office at 120 Broadway.

Ky., Louisville.—Yatesville Oil & Gas Co., capital \$100,000, inceptd. by M. R. Labbee, Henry E. Wells and H. E. Packer.

Ky., Winchester.—Green River Oil & Gas Co., capital \$100,000, inceptd. by R. E. Loomis, E. E. Barbee, H. C. Nunnally and H. T. Lisle.

Ky., Winchester.—Neville Oil & Gas Co., capital \$24,000, inceptd. by C. B. George of Winchester, Ed. F. Fiest and C. F. Neville of Steubenville, Ohio.

Okla., Ada.—Kirk Oil Co., capital \$50,000, inceptd. by J. E. Bristow, F. E. Bristow and A. L. Battenfield.

Okla., Cherokee.—Tulsa-Cherokee Oil & Gas Co., capital \$25,000, inceptd. by J. H. Blythe, A. J. Powell and L. I. Powell.

Okla., Chickasha.—Chickasha Lease Holding Co., capital \$50,000, inceptd. by R. E. Starns, W. T. Bailey and K. F. Lindsay.

Okla., Enid.—Rhodell Oil Co., capital \$25,000, inceptd. by F. E. Chappell of Enid, Wm. F. Willis and R. E. Willis of Sullivan, Ind.

Okla., Enid.—Enid Co-operative Oil Co., capital \$100,000, inceptd. by John B. Means, N. J. Gubser and Harvey Gerard.

Okla., Guthrie.—Carbo Oil Co., capital \$50,000, inceptd. by E. L. Semke, A. E. Helden and others.

Okla., Henryetta.—Henryetta Producing & Refining Co., capital \$10,000, inceptd. by L. H. Cox, J. O'Hornett and W. L. Collins.

Okla., Kelleyville.—Wilson-Weirough Drilling Co., capital \$4000, inceptd. by H. C. Wilson and H. H. Harvey of Kelleyville, and N. S. Weirough of Sapulpa, Okla.

Okla., Lawton.—Osaple Oil Co., capital \$100,000, inceptd. by J. F. Rowell, R. W. Robertson and N. R. Robertson.

Okla., McAlester.—Gray Wolf Oil & Gas Co., capital \$100,000, inceptd. by W. O. Carpenter of McAlester, J. E. Layden of Harts-horne, Okla., and Adolph Hansen of Salt Lake City, Utah.

Okla., Muskogee.—Elliswhite Oil & Gas Co., capital \$100,000, inceptd. by Fred P. Branson, Glenn Alcorn and H. L. Armstrong.

Okla., Muskogee.—Center Oil Co., capital \$5000, inceptd. by W. E. Hornaday and Geo. D. Rodgers.

Okla., Muskogee.—Oil Refinery.—Haskell Refining Co., capital \$150,000, inceptd. by F. L. Beam of Muskogee, Carr Peterson of Haskell, Okla., and Robt. Rawls of Jackson, Miss.

Okla., Norman.—Petroleum Development Assn., capital \$5000, inceptd. by C. H. Bessent of Norman, J. B. White and J. M. Young of Oklahoma City.

Okla., Oklahoma City.—All-American Oil & Gas Co., capital \$125,000, inceptd. by Ralph W. Ray, J. W. Choate and D. W. Bird.

Okla., Oklahoma City.—Orco Oil Co., capital \$100,000, inceptd. by T. C. Cooper, E. F. Ross and Pearl Wlar.

Okla., Oklahoma City.—Anna Belle Oil & Gas Co., capital \$100,000, inceptd. by G. E. Montgomery and L. Trevor Lewis of Oklahoma City and Geo. Gorton of Racine, Wis.

Okla., Oklahoma City.—Proprietary Oil Development Co., capital \$30,000, inceptd. by J. F. Cody, W. F. Quay and J. S. Acree.

Okla., Oklahoma City.—Cushing-Glenn Pool Co., capital \$25,000, inceptd. by T. A. Wagoner of Wetumka, C. R. Stanton of Sapulpa, and Hall P. Ross of Kansas City.

Okla., Okmulgee.—Gas Plant.—Manufacturers' Gas Co., capital \$6000, inceptd. by C. H. Baker, John E. Baker and G. M. Steele.

Okla., Quinlan.—Rexnordyke Oil & Gas Co., capital \$200,000, inceptd. by Rex. Nordyke and R. F. Cockrill of Quinlan and D. H. Powers of Woodward, Okla.

Okla., Ringling.—Gas Plants, etc.—Consumers' Light & Power Co. inceptd. with \$1,000,000 capital by Wm. H. Baehr of Chicago and others; acquired lighting and ice plants in Oklahoma cities; these include: South-western Public Service Co.'s gas plant at Ringling; Ardmore City Gas Co.'s plant at Ardmore; Waurika Ice, Light & Power Co.'s properties at Waurika; gas plants at New Healdton and New Wilson; ice plants at Ardmore and Ringling; light and ice properties at Madill, Durant, Bennington, Armstrong, Caddo and Bokchita; now installing electric-light plant at Ringling; P. C. Ekern of Ardmore, Mgr. for Southern Oklahoma.

Okla., Sapulpa.—M. L. & S. Oil & Gas Co., capital \$250,000, inceptd. by Max Meyer, Vance Likely and B. C. Schwab.

Okla., Tulsa.—Gasoline.—Pure Gasoline Co., capital \$10,000, inceptd. by H. W. Anders, M. S. Cory and W. R. Anders.

Okla., Tulsa.—Naples Oil Co., capital \$20,000, inceptd. by Roy R. Poe, Nolan W. Moore and M. J. Ueberrhein.

Okla., Tulsa.—Oklamar Oil & Gas Co., capital \$50,000, inceptd. by L. W. Rock, Tommie Taylor and Remington Rogers.

Okla., Tulsa.—Missouri Pacific Oil Co., capital \$50,000, inceptd. by A. R. Thomas of Tulsa, Chas. H. Loomis and John A. Burke of Little Rock, Ark.

Okla., Tulsa.—Sinclair Gulf Corp. chartered with \$20,000,000 capitalization by H. F. Sinclair and associates; has interest in 7000 acres gas and oil leases in Mid-Continent field, with 157 wells having daily capacity 16,000 bbls. oil; owns and has interest in various other properties, including ocean-going tank steamers.

Tex., Bay City.—Imperial Production Co., capital \$50,000, inceptd. by M. Thompson, C. G. Hamill and others.

Tex., Houston.—Arcola Production Co., capital \$30,000, inceptd. by J. H. Carroll, B. W. Armstrong and D. B. Vinson.

W. Va., Huntington.—Peggy Oil & Gas Co., 350 Fourth Ave., inceptd. with \$5000 capital

by Geo. C. Garred, E. W. Felix, C. C. Rand and others.

HYDRO-ELECTRIC PLANTS

Ala., Columbia.—J. Ed Foy and Dermot Shemwell of Lexington, N. C. inceptd. company with \$100,000 capital to further develop water-power on Musser Creek near Columbia; plant recently acquired; plan to reconstruct plant and build dam; secured contracts to furnish electricity to Columbia, Ashford and Headland; main office in Lexington, N. C.

Ala., Wetumpka.—Montgomery Light & Water Power Co., Montgomery, Ala., contemplates extending electric transmission system to Wetumpka.

Ark., Gillham.—B. & A. Mining Co., Okmulgee and Gillham, contemplates construction of hydro-electric plant. (See Machinery Wanted—Hydro-electric Equipment.)

Ga., Cartersville.—Georgia Ry. & Power Co., H. M. Atkinson, Chmn., Atlanta, does not contemplate constructing hydro-electric plant on Etowah River near Cartersville at this time. (Recent report erroneous.)

S. C., Wateree.—Southern Power Co., Charlotte, N. C., will build hydro-electric plant on Wateree River; cost \$5,000,000; develop 100,000 H. P.; let construction contract at about \$2,000,000 to Hardaway Contracting Co., Columbus, Ga.; contract calls for 2500-ft. concrete dam, 78 ft. high, impounding water to drive 5 hydro-electric units, each having capacity of 20,000 H. P.; about 350,000 cu. yds. masonry and 100,000 cu. yds. excavation; also 20 mi. transmission system from Wateree to Great Falls, there connecting with present 1600-mi. 3-wire high-tension system; contract for water-wheels and generators let to Allis-Chalmers Mfg. Co., Milwaukee, Wis.; cement, transformers, switchboards and other equipment not purchased; plant to have five 14,000 K. W. units; completion Nov. 1, 1917.

ICE AND COLD-STORAGE PLANTS

Ark., Truman.—Truman Ice Co., capital \$4000, inceptd. by John Mason, J. F. Mason, Gordon Matthews and others.

Ky., Bellevue.—John S. Weigand Ice Co., capital \$10,000, inceptd. by John S. Weigand, John M. Weigand and Alex. Weigand.

Okla., Grandfield.—Maple & Green will rebuild ice and electric-light plants reported burned.

S. C., Saluda.—Public Service Corp. will erect 10-ton ice plant; also improving electric-light system; total cost \$17,000.

Tenn., Columbia.—Columbia Produce Co. will install refrigerating machinery about 12½ tons capacity, and piping. (See Machinery Wanted—Refrigerating Machinery.)

Tex., Port Arthur.—Consumers Ice & Coal Co., capital \$30,000, inceptd. by J. F. Jakowicz of Port Arthur, J. E. Josey and R. C. Miller of Beaumont.

Tex., Terrell.—City Ice & Sales Co., capital \$3000, inceptd. by Matthew Cartwright, Jr., G. H. Meason, Jr., and H. E. Gardner.

IRON AND STEEL PLANTS

Mo., St. Louis.—Steel Rolling Mill.—Railway Tie Corp., Chicago and Philadelphia, is reported to build steel rolling mill for manufacturing bar iron, angles, beams, rods, the plates, metallic ties, etc.

LAND DEVELOPMENTS

Ala., Birmingham.—Consolidated Land Co. inceptd.; T. V. Hoyt, Prest.; J. W. Ferguson, V. P.; E. L. Mullinax, Secy.-Treas.

Mo., Cumberland.—Allegany Realty & Development Co., capital \$25,000, inceptd. by Fred N. Zihlman, Peter G. Cowden, Chas. H. Holtzman and Harry Footer.

Mo., Cumberland.—Cumberland Land Co., capital \$14,000, inceptd. by W. Carl Richards, John R. Warfield and others.

N. C., Asheville.—Paul Roebbing of New York purchased land and will develop as residential and amusement park; improvements to include lake.

N. C., Charlotte.—McLendon Land Co., capital \$100,000, inceptd. by J. W. McClung, A. T. Lindsay and S. D. Dandridge.

S. C., Greenwood.—Greenwood Cotton Mill will develop park for operatives; landscape gardener to design grounds; improvements to include bandstand, summer-house, skating rink, cold drink stand, tower, etc.; also children's playground; has let contract for buildings.

Tenn., Jackson.—Collins Development Co., capital \$30,000, inceptd. by W. V. Edenton, P. J. Young, F. C. Haas and others.

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Va., Richmond.—Chehaw Land & Cattle Co., capital \$50,000, inceptd.; Jas. Mullen, Pres.; Cyrus W. Beale, Secy.-Treas.

W. Va., Bridgeport.—Bridgeport Improvement Co., capital \$10,000, inceptd. by A. L. Talbott, Chester O. Davisson, O. L. McDonald and others of Clarksburg, W. Va.

W. Va., Putnam County.—Putnam County Land Co., capital \$15,000, inceptd. by H. D. Hatfield and Wm. M. Bronson of Logan, Chas. H. Bronson of Huntington and others.

LUMBER MANUFACTURING

Ala., Edwadsville.—Jackson-Tinney Lumber Co. of Talladega, Ala., purchased properties of Alabama Mineral Land Co., comprising 72,000 acres yellow pine timber, extending from Edwadsville to Pylriton; Jackson Bros. Lumber Co. of Tallapoosa, Ga., will build plants and cut timber on 20,000 acres from Edwadsville to Oxford, Ala.; both companies will increase saw mill capacity to 100,000 ft. lumber per day and specialize in edge-grain flooring.

Ala., Pinebelt.—Berrey-Reeves Lumber Co., lately noted inceptd., capital \$50,000, organized with W. B. Berrey, Pres.; T. L. O'Donnell, Sanford, Miss., V.-P.; T. W. Reeves, Secy.-Treas.; organization consolidates Pine Belt Lumber Co. with W. W. Berrey & Sons; now completing rebuilding of band mill.

Ky., Crittenden.—Reliable Lumber Co. increased capital from \$3000 to \$15,000.

Ky., Brodhead.—H. C. Woolf, Mgr. Harbourn Tie & Lumber Co., Winchester, Ky., purchased 2000 acres timber land in Rockcastle County; will install 2 mills and cut timber for cross-ties.

Ky., Seco.—South East Coal Co. will install sawmill and develop hardwood timber boundary.

Okla., Quapaw.—Gilmore-Gann Lumber Co., capital \$5000, inceptd. by I. L. Gilmore of Commerce, Okla.; H. J. Gann and G. M. Gann of Kansas City, Mo.

S. C., Bishopville.—Enterprise Lumber Co., capital \$3000, inceptd.; J. S. Dixon, Pres.; J. H. Dickson, V.-P.; L. F. Josey, Secy.; E. G. Deschamps, Treas. and Mgr.

Tex., Dallas.—Clem Lumber Co., capital \$400,000, inceptd. by John Clem, J. R. Clem, R. H. Clem and others.

Tex., Ore City.—Southern Dimension Oak Co., capital \$6000, inceptd. by A. M. Kirkland and H. A. Williams of Longview, Tex.; J. D. Field and others of Omaha, Neb.

METAL-WORKING PLANTS

Ark., Fort Smith.—Metal Products.—Fort Smith Metal Products Co., capital \$50,000, inceptd. by S. B. Nussbaum, Ed. Ballam and W. J. Kropp.

Va., Axton.—Wagon Frame Brackets.—D. F. Dunlop will manufacture wagon frame brackets. (See Machinery Wanted—Tires.)

MINING

Ala., Quenelda.—Graphite.—Eagle Graphite Co., Ashland, Ala., J. B. White, Pres., and C. S. Northen, Secy., advises Manufacturers Record further relative to development described in Dec.: Acreage 200; daily capacity 200 tons crude ore; machinery purchased; contemplate erection of another plant in summer; also addition of refining plant to manufacture lubricants, paints, polishes, etc.; probably need additional machinery and equipment about June 15.

Ala., Lineville.—Graphite.—Consolidated Graphite Co., capital \$5000, inceptd. by C. J. Ford, R. Killbrev and W. H. Gilt.

North Carolina.—Graphite.—General Graphite Co., 1823 Jefferson Bank Bldg., Birmingham, Ala., capital stock \$1,500,000, to mine and manufacture graphite in North and South Carolina, advises Manufacturers Record: Contemplate beginning mining operation in May; main office at Birmingham until location of refining plant; operate at least 3 mines; manufacture graphite into various products; probably locate manufacturing plant at same point with refinery, shipping the concentrates from mines to factory for finishing. (Noted in Jan. as organized.)

N. C., Stony Point.—Aswester Mining & Milling Co., capital \$50,000, inceptd. by J. A. Sams, J. S. Keener and G. B. Halyburton.

Okla., Afton.—Afton Mining Co. organized with N. C. Barry, Pres., Miami, Okla.; W. E. Byrd, Secy.; J. C. Tucker, Treas.; both of Afton; develop 20-acre mining lease.

Okla., Miami.—Farmington Mining & Prospecting Co., capital \$10,000, inceptd. by Russell Doss and M. A. Young of Miami and Henry W. Manley of Farmington, Mo.

Tenn., Ocoee.—Copper.—Ocoee Copper Co. organized with \$1,250,000 capital; J. I. Carter, Pres.; John Stagnmaier and G. H. Miller, V.-Ps.; Sam E. Whitaker, Secy.; P. B. Carter, Treas.; all of Chattanooga; advises Manufacturers Record: Have encountered high-grade ore in four places, with diamond drill, on 120 acres; expect to sink shaft and will build smelter. (Lately noted inceptd.)

Tex., San Antonio.—Fuller's Earth.—Medina Fullers Earth Co., capital \$100,000, inceptd. by O. T. Gregory and E. D. Henry of San Antonio, and L. R. Parker of Aurora, Ill.; acquired 160 acres fuller's earth land for \$65,000; expend \$50,000 to develop plant to daily capacity of 2 carloads.

Va., Richmond.—Virginia Development Corporation, capital \$500,000, chartered; E. S. Bolen, Pres.; Andrew D. Christian, Secy.-Treas.

MISCELLANEOUS CONSTRUCTION

Ala., Daphne.—Wharf.—Daphne Wharf & Improvement Co., capital \$5000, inceptd. by Wm. O'Neal, P. W. McAdam, Jos. Gentile, Geo. Keinhoff and others.

Tex., Mount Vernon.—Levee.—Franklin County Levee Improvement Dist. No. 1 let contract to Henry J. Cox & Co., Alexandria, La., to construct 12 to 15-ft. levee across entire north boundary of county for reclamation of several thousand acres bottom land along Sulphur River.

MISCELLANEOUS ENTERPRISES

Ala., Birmingham.—Plumbing and Heating. Co-operative Plumbing & Heating Co. increased capital from \$2000 to \$6500.

Ala., Carbon Hill.—Printing.—Journal Printing Co., capital \$3000, inceptd. by Duncan McDonald, G. L. Wakefield and Irving A. Dove.

Ala., Laverne.—Hardware.—Laverne Hardware Co., capital \$6000, inceptd. by W. B. Howard, Jr., J. R. Horn, M. M. Bentley and others.

Fla., Grand Crossing.—Stockyards.—Consolidated Stock Yards, capital \$100,000, inceptd. by John M. Stevens and others; establish stockyards on 100-acre site; erect pens, barns and other buildings.

Fla., Jacksonville.—Engineering.—Halsema-Buckland-Fitchner Co., capital \$50,000, incorporated; J. C. Halsema, Pres.; H. C. Buckland, V.-P.; E. D. Fitchner, Secy.-Treas.

Fla., Fort Valley.—Laundry.—H. and I. School, A. C. Childs interested, contemplates erection of laundry. (See Machinery Wanted—Laundry Machinery.)

Ky., Lexington.—Hardware.—C. M. Marshall & Co., capital \$25,000, inceptd. by C. Marshall, S. B. Featherstone, J. D. Milburn and T. M. Coone.

Ky., Louisville.—Grain Elevator.—Kentucky Public Elevator Co. will rebuild grain elevators at 13th and Gallagher Sts. lately noted burned; estimated loss on elevators \$300,000.

Ky., Louisville.—Electric Appliances.—Wm. C. Krauth Electric Co., capital \$3000, inceptd. by Wm. C. Krauth, Edwin N. Krauth and Herman F. Andres.

Mo., Kansas City.—Electrical.—M. O. K. Electric Co., capital \$6000, inceptd. by Paul M. Fogel, Harry F. Fisher and G. W. Stubbs.

Okla., Tulsa.—Laundry and Cleaning Plant. Quality Laundry & Cleaning Co., capital \$50,000, inceptd. by J. G. Robinson and C. F. Meek of Tulsa, and L. M. Robinson of Coffeyville, Kans.

S. C., Lexington.—Publishing.—Lexington Dispatch-News, capital \$2500, inceptd. by G. M. Harmon and S. J. Leaphart.

Tenn., Nashville.—Laundry.—Young Men's Business League, P. F. Hill, Pres., is promoting installation of \$10,000 laundry.

Tex., Dallas.—Laundry.—Oriental Hotel, Otto Herold, Mgr., will erect \$25,000 addition to laundry; 2 stories; brick; portion of structure for power-house.

Tex., Niles City, P. O. at Fort Worth.—Grain Elevator.—E. M. Kolp contemplates erecting 100,000-bu. grain elevator; frame structure; replace burned elevator of E. R. & D. C. Kolp Grain Co.

Tex., San Antonio.—Engineering.—Laidlaw Engineering Co. inceptd. by R. A. Laidlaw, Jos. Donaldson and J. H. Grover.

Va., Petersburg.—Contracting.—Terminal Building Co., capital \$100,000, inceptd.; M. A. Finn, Pres.; J. L. Vaughan, V.-P.; Robt. J. Francis, Secy.-Treas.

MISCELLANEOUS FACTORIES

Ala., Quenelda.—Graphite Products.—Eagle Graphite Co., Ashland, Ala., contemplates

construction of plant to manufacture lubricants, paints, polishes, etc. (See Mining.)

Ala., Montgomery.—Mosquito Preventive.—Sweet Dreams Co., capital \$3000, inceptd. by J. Otis Williamson, Robt. Walton and Silas S. Nettles.

Ark., Newport.—Ice Cream.—S. Switow of Louisville, Ky., contemplates establishing ice-cream factory.

Ark., Russellville.—Creamery.—Elbert Garrett of Clarksville, Ark., leased Shinn Bldg.; equip as creamery and ice cream factory.

Ala., Wetumpka.—Aprons.—Monarch Manufacturing Co. of Nashville, Tenn., is considering establishment of apron factory at State Penitentiary at Wetumpka.

D. C., Washington.—Explosives.—Standard Explosives Corp., capital \$5000, inceptd.; Edward G. Seibert, Pres. (1545 I St. N. W.); Jos. A. High, Secy.

Ga., Atlanta.—Ice Cream.—American Ice Cream Manufacturing Co., capital \$10,000, inceptd. by J. B. McCallum and Earl Sims.

Ga., Port Wentworth.—Paper and Pulp.—Atlantic Paper & Pulp Corp., M. T. Nichols, V.-P. and Gen. Mgr., Savannah, writes to Manufacturers Record: Mill of fireproof construction; now progressing; our own engineering; subletting small portion of work to local contractors. (In Nov., 1916, noted inceptd. with \$1,500,000 capital and to build \$500,000 plant with daily capacity 50 tons pulp.)

Ky., Paducah.—Bottling.—Cherry-Cola Co., capital \$100,000, inceptd. by J. W. Williams, W. A. Berry and Geo. H. Jacobs.

La., New Orleans.—Shipbuilding.—New Orleans Drydock & Shipbuilding Co. purchased for operation with present plant the Southern Drydock & Shipbuilding Co.'s drydock noted in December, with Doullut & Williams of New Orleans interested.

La., Lake Charles.—Hair Tonic.—S. O. S. Mfg. Co., capital \$9000, inceptd.; Wm. J. Renz, Pres.; C. A. Scaife, V.-P.; Herman W. Rock, Secy.-Treas.

Md., Baltimore.—Aeroplanes.—National Automatic Flying Machine Co. of America, 225-232 Law Bldg., inceptd. with \$300,000 capital by J. Frank Cox, Geo. E. A. Fairley and Wm. H. Logue, Jr.

Md., Baltimore.—Stencils, Rubber Stamps, etc.—J. F. W. Dorman Co., 526 N. Calvert St., will erect additional building at 528 N. Calvert St.; cost \$3500; 20x45 ft.; Henry A. Knott & Co., Contrs., 2101 N. Calvert St., Baltimore; plans by Mr. Aiken.

Md., Baltimore.—Brewery.—Standard Brewery, Gay St. and Patterson Park Ave., inceptd. with \$125,000 capital by Jos. Gottschalk, J. Henry Thomas and Edwin M. Fleischmann.

Md., Baltimore.—Toys.—International Wood & Paper Products Corp., 117 N. Calverton Rd., let contract Gladfelter & Chambers, 729 Roland Ave., Baltimore, to erect plant at Calverton Rd. and Lexington St.; cost \$21,900; 107x40 ft.; 4 floors; mill construction; plans by Jas. R. Edmunds, Jr., 908-09 Munsey Bldg., Baltimore; will install presses, saws, moulders, pulp and paper machinery; manufacture toys; 1000 daily. (Lately noted.)

Md., Baltimore.—Creamery.—Maryland Creamery Co., 1736-32 E. Pratt St., inceptd. with \$10,000 capital by Jacob Abramowitz, Wm. Abramowitz, Nathan Bless and Max Selikowitz; purchased Maryland Dairy Co.'s plant, 1700 E. Pratt St.; will improve buildings and install additional machinery to increase capacity to 250,000 gallons per annum.

Md., Frostburg.—Glass.—Frostburg Glass Co., capital \$100,000, is being organized to build glass plant 300x80 ft.; Davidson Armstrong, Roberdeau Annan, G. D. Hocking and others are interested.

Md., Salisbury.—Shirts.—Jackson & Gutman Co., W. F. Jackson, Pres., noted in February to rebuild shirt factory on enlarged scale, will erect 49x275-ft. building, with 40x100-ft. wing; Archts. Owens & Sisco, Continental Bldg., Baltimore; install machinery, mainly sewing machines.

Miss., Vicksburg.—Creamery.—Merchants Co-operative Creamery, capital \$5000, inceptd. by A. J. Martin, W. S. Jones, Power P. Vail and others.

Mo., Kansas City.—Clothing.—U. S. Garment Mfg. Co., capital \$50,000, inceptd. with M. Terte, Pres.; leased building at 915 Broadway and will equip to manufacture skirts, children's clothing, etc.

Mo., Kansas City.—Chewing Gum.—Continental Gum Co., capital \$250,000, inceptd. by Wm. B. Henderson, Carter Wilder, E. C. Platt and others.

N. C., High Point.—Fillers, etc.—Marietta Paint & Color Co., Marietta, Ohio, purchased

Piedmont Filler & Stain Co.'s plant and will increase capacity; at first manufacture fillers; later plans to add stains, paints, etc.

N. C., Winston-Salem.—Tobacco.—R. J. Reynolds Tobacco Co. increased preferred capital stock from \$2,500,000 to \$5,000,000; common stock is \$10,000,000, increase making total capital \$15,000,000.

Okla., Oklahoma City.—Brooms.—Panhandle Broom Mfg. Co., 516 S. Robinson St., inceptd. by J. F. Barbour and J. M. Stivers of Oklahoma City, and D. W. Pinkston of Minco, Okla.

Okla., Oklahoma City.—Egg Substitute.—Egg-O Mfg. Co., 516 S. Robinson St., organized; J. G. Ackerman, Pres.-Mgr.; Paul P. Pinkerton, V.-P.; D. J. Mueller, Secy.; manufacture egg substitute for baking and cooking; no building at present. (Lately noted inceptd., capital \$10,000.)

Okla., Oklahoma City.—Pharmaceuticals, etc.—Naphthol Mfg. Co., 2310 S. Robinson St., J. P. Williams, Pres.-Mgr., will build and operate chemical laboratory lately noted to be established by Prehistoric Oil & Gas Co. (allied interests); erect 25x120-ft. fireproof building; Contr., John McKinney; F. C. Thiele, care of Skirvin Hotel, Oklahoma City, Constr. Engr.; machinery purchased; manufacture pharmaceuticals, white oil and naphthol, etc.

S. C., Greenwood.—Cigars.—Joe G. Greene Cigar Co. leased second floor of building to be erected by Howard B. Ellis, J. W. Bradford and Taylor Goodwyn; structure will be 40x100 ft., with cement basement; plans by Summer & Hemphill of Greenwood.

Tenn., Cleveland.—Potash.—Carolina Chemical Works, capital \$10,000, inceptd. by A. L. Kirkpatrick, M. J. Shyer, Oscar C. Scharzenberg and others.

Tenn., Cleveland.—Bottling.—Ocoee Bottling Co., John H. Smith, Pres., and Mack J. Harper, Mgr., will rebuild plant lately noted burned at \$4000 loss; install machinery for bottling soft drinks.

Tenn., Dandridge.—Cheese.—T. A. Carmichael, Sam McMurry and others are promoting organization of company to establish cheese factory.

Tenn., Jackson.—Ice Cream and Candy.—Beare Bros. Ice and Coal Co., R. L. Beare, Mgr., contemplates installation of ice cream and candy machinery. (See Machinery Wanted—Ice Cream Machinery; Candy Machinery.)

Tenn., Jellico.—Clothing.—Jellico Clothing Mfg. Co. increased capital from \$35,000 to \$75,000.

Tenn., Knoxville.—Art Glass.—Frank H. Gustafson, Box 491, will establish manufacture of art glass; will need the metal supplies (See Machinery Wanted—Metals.)

Tenn., Nashville.—Cereals.—Golden Grain Cereal Co. increased capital from \$150,000 to \$200,000.

Tenn., Lawrenceburg.—Rope Meters, etc.—E. M. Gant Mfg. Co., capital \$5000, inceptd. by E. M. Gant, Alf. H. Williams, I. M. Bryan and others.

Tenn., Memphis.—Furniture Polish.—B-Nu Mfg. Co., capital \$15,000, inceptd. by Dave Wurtzbarger, P. S. Dimmock, Albert Seessel and others.

Tenn., Nashville.—Ice Cream and Candy.—John Decker & Son, 1411 Church St., let contract to J. R. Williams, Nashville, to erect 30x100-ft. 2-story brick and concrete building for ice cream and candy manufacturing; cost \$8000; tar and gravel roof; first floor of concrete and second of wood.

Tex., Fort Worth.—Paint.—W. G. Rogers Paint Mfg. Co., 1123 N. Main St., will install additional machinery to double daily capacity of 200 gals. paint.

Tex., Fort Worth.—Creamery.—Nisley Creamery Co., lately noted increasing capital from \$100,000 to \$200,000, has fireproof building under construction; Contr., Hedrick Construction Co., Fort Worth.

Tex., Grand Prairie.—Grand Prairie Mfg. Co., capital \$110,000, inceptd. by J. C. Deshong of Mineola, Tex.; J. K. Warren of Paris, Tex., and J. F. Butcher of Bay City, Mich.

Tex., Lindale.—Creamery.—Union Creamery Co., capital \$10,000, inceptd. by Robt. F. Yarbrough, W. D. Coleman, L. W. Pierce and others.

Va., East Radford.—Creamery.—Holland Dairy & Creamery Co., capital \$75,000, inceptd.; A. E. Green, Pres., Roanoke; J. L. Vaughan, Secy., Shawsville, Va.

Va., Farmville.—Building Materials.—Farmville Manufacturing Co., capital \$50,000, inceptd.; G. M. Robeson, Pres.; E. Perrow, Secy.

Va., Norfolk.—Collar Pads.—Norfolk Collar Pad Co. will occupy building to be erected

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by Isaac L. Margolius; structure will be 3 stories; brick; contain 8000 square ft. floor space; automatic sprinklers; cost \$12,000; Jacob Tevis prepared plans and has construction contract.

Va., Richmond—Boxes.—Wiltshire Corrugated Paper Box Co., capital \$50,000, inceptd.; R. H. Gunst, Pres.; W. B. Wiltshire, Secy.

Va., Richmond—Blotting Paper.—Standard Paper Mfg. Co. will erect addition to plant; later proposes remodeling present building. The company advises Manufacturers Record: Plans for enlargement of paper and pulp mill will not be taken up in immediate future.

Va., Salem—Syrup.—Dixie Flap Syrup Corp., capital \$100,000, chartered; I. V. Yonce, Sr., Pres.; G. V. Yonce, Secy.-Treas.

W. Va., Grafton—Glass.—Hazel-Atlas Glass Co. let contracts for erection of \$50,000 addition; to Keeley Bros. of Clarksburg, W. Va., for excavating, concrete work and flooring, and Penn Bridge Co. of Beaver Falls, Pa., for structural iron work.

W. Va., Parkersburg—Clothing.—National Woolen Mills increased capital to \$300,000; plans to more than double present weekly capacity of 1000 suits and overcoats; advises Manufacturers Record: Will not build at present or in near future.

MOTOR CARS, GARAGES, TIRES, ETC.

Ala., Wetumpka—Automobiles.—Elmore Sales Co., capital \$4000, inceptd. by Wm. Pennington, M. D. Still, G. A. Ritch and J. L. Rouse.

Ark., Arkadelphia—Garage.—John W. Allen will erect garage.

Ark., Harrison—Garage.—Geo. W. O'Neal, O'Neal Bldg., 217 W. Stephenson Ave., will prepare plans for garage lately noted to cost \$10,000; 50x100 ft.; reinforced cement construction beams and girders, trussed steel roof supports, hollow-tile walls; will buy materials and construct by day labor; install equipment.

Ark., Little Rock—Tires.—Universal Tire Co., capital \$3500, inceptd. by Henry Frankel, D. O. Kirkland and D. M. Boone.

Ark., Springdale—Garage.—Springdale Garage Co. inceptd. by L. C. White, P. J. White and Andrew Ballew.

D. C., Washington—Garage.—Hartig Motor Co. will erect salesroom and garage at Seventh and K Sts. N. W.; 3 stories; 51x108 ft.; brick and concrete; steel frame; steel washes; concrete roof; cost, \$12,000.

D. C., Washington—Garage.—John Morris will erect garage at 1625 U St. N. W.; 2 stories; cost, \$13,000; B. Stanley Simmons, Archt., Real Estate Trust Bldg., Washington; Michael A. Wellor Co., Contr., 701 Equitable Bldg., Washington.

Fla., Jacksonville—Garage.—Peoples Garage Co., capital \$50,000, inceptd.; W. N. Mitchell, Pres.; A. L. Cherry, V.-P.; M. L. Brown, Secy.; L. O. Billings, Treas.

Fla., Oldsmar—Farm Tractors.—Reolds Farms Co., F. L. Cook, V.-P., Tampa, Fla., writes to Manufacturers Record: Tractor company plans not yet developed for publication; arrangements are progressing rapidly; probably quite a large tractor manufacturing plant will be located. (R. E. Olds, Lansing, Mich., and Tampa Bay Hotel, Tampa, lately reported under Tampa as interested in \$1,000,000 company to build farm tractor works; Mr. Olds is Pres. of Reolds Farms Co.)

Ga., Atlanta—Automobiles.—Geo. W. Hanson, Don Ferguson and Arthur Burdette organized company to manufacture automobiles; annual capacity 2000 automobiles.

Ga., Atlanta—Garage.—Lee Hagan will erect garage at 47 Armstrong St.; brick; cost \$3300; Adair & Weinmeister, Contrs.

Ga., Macon—Puncture Filler.—Georgia Ker-Ker Sales Co., capital \$1000, inceptd. by D. Witman and M. J. Witman; to manufacture filler for punctures in automobile tires.

Ky., Bowling Green—Automobiles.—Imperial Auto Co. increased capital from \$8000 to \$30,000.

Ky., Central City—Garage.—J. W. Blackwell & Sons will erect 2-story brick garage; repair shop on first floor.

Ky., Lexington—Tires.—Service Tire Co., capital \$10,000, inceptd. by S. L. Van Meter, Jr., M. A. Bosworth and A. F. Geisler.

Ky., Louisville—Garage.—J. F. Taylor will erect brick garage; cost \$6000.

Ky., Middlesboro—Garage.—Middlesboro Auto Garage Co. changed name to Motch Motor Co. and will erect concrete garage.

Md., Baltimore—Automobile Tires.—South-

ern Tire Sales Co., 2725 Riggs Ave., inceptd. with \$10,000 capital by Edward Stallknecht, Martha E. Stallknecht and Rita Stallknecht.

Md., Baltimore—Garage.—E. J. Hentschel will erect commercial garage at 434-36 N. Front St.; 2 stories; brick; Henry Maas, Contr., 1119-21 Ensor St., Baltimore; Chas. W. Koch, Archt., 107 W. Hamilton Ave.

Md., Baltimore—Automobiles.—Co-operative Automobile Repair Co., 1407 E. Monument St., plans to double capacity.

Md., Baltimore—Garage.—D. C. Butcher, 2903 Huntington Ave., will erect garage; 1 story; 60x150 ft.; slag roof; steam heat; Butcher & Williams, Contrs., 15 E. Fayette St., Baltimore.

Mo., Kansas City—Garage.—R. T. Romine will erect garage at 1404-1406 E. 31st St.; 2 stories; brick; cost \$30,000.

Mo., St. Louis—Garage.—Vesper-Buick Automobile Co., F. W. A. Vesper, Pres., will erect building; 2 stories; 103x144 ft.; L. Baylor Pendleton, Archt.

N. C., Durham—Garage.—B. N. Duke will erect garage; cost \$7600.

N. C., Durham—Garage.—Cary Lumber Co. purchased 970 acres timber land in Durham County and contemplates development.

N. C., Morvin—Automobiles.—Morvin Auto Co., capital \$15,000, inceptd. by J. N. McLean, Blacklock-Allyn Hardware Co. and Morvin Hardware Co.

N. C., Shelby—Garage.—J. F. Harris and John Black will erect garage; brick; 50x80 ft.

Okla., Blackwell—Automobiles.—Ever Ready Motor Co., capital \$5000, inceptd. by Jas. B. Nave, Ida Nave and W. M. Vickery.

Okla., Muskogee—Automobiles.—Federal Investment Co., care of M. L. Bragdon, Muskogee, will erect 1-story 75x100-ft. building for automobile salesrooms at southeast corner Okmulgee and 4th Sts.; cost, without mechanical equipment, \$12,000; matt brick and Bedford stone construction; bids opened Mch. 3; Archts., H. O. Valeur & Co., Muskogee.

Okla., Muskogee—Automobiles.—Lyles Motor Co., capital \$2000, inceptd. by J. T. Lyles, J. B. Lyles and Ella M. Lyles.

Okla., Oklahoma City—Automobiles.—Pullman Auto Co., capital \$5000, inceptd. by Smith Dolliver, Chas. W. Friss and Mrs. Ora E. Friss.

Okla., Oklahoma City—Garage.—Ozark Garage Co., capital \$2500, inceptd. by Geo. D. Reagan, Stanley K. Rogers and Nettie M. Reagan.

Tenn., Chattanooga—Automobiles.—Taxicab Auto Service Co., capital \$5000, inceptd. by E. B. Shadden, W. M. Fry, J. R. Dickson and others.

Tenn., Lexington—Automobiles.—Lexington Motor Car Co. inceptd. by L. H. Pearson, W. C. Pearson, S. H. Pearson and T. G. Hardin.

Tenn., Nashville—Motor Trucks.—Trans-Mo-Track Co. is being organized by S. O. Edmonds of Eagleville, Tenn., and others to manufacture patented automobile truck for heavy hauling.

Tex., Corpus Christi—Automobiles.—Reed Automobile Co., capital \$12,000, inceptd. by J. B. Outman, D. T. Reed and Morris F. Briggs.

Tex., Dallas—Garage.—Geo. H. Bird will erect automobile storage and supply building; 3 stories; concrete; capacity for 200 automobiles; elevator to convey cars to and from second and third floors.

Tex., Dallas—Dauch Manufacturing Co., Sandusky, Ohio, inceptd., capital \$30,000, to operate as sales company in distributing Sandusky tractor; will erect building 30x150 ft.; H. F. Myers, Gen. Mgr.

Tex., Houston—Oldsmobiles.—Texas Oldsmobile Co., capital \$10,000, inceptd. by W. F. Anderson and Edward H. Moon of Houston and J. M. Wiggins of Beaumont, Tex.

Tex., Port Arthur—Automobile Station.—Ford Motor Co. (main office Detroit, Mich.), T. E. Linn, local representative, will erect \$15,000 station to handle and repair automobiles.

Tex., San Antonio—Garage.—A. G. Dugger will erect brick garage; cost \$14,000.

Tex., San Antonio—Garage.—O. J. Salcher will erect tile garage; cost \$3000.

Tex., San Antonio—Garage.—A. B. Stevens will erect garage; 1 story; 61x130 ft.; hollow tile, brick and reinforced concrete; plate-glass windows; hardwood floors; cost, \$10,000; T. T. Tygart, Contr.

Tex., Sunset—Garage.—J. E. Tucker will erect 28x30-ft. garage. (See Machinery Wanted—Roofing and Ceiling.)

Va., Norfolk—Automobiles.—Gay Motor

Corp., capital \$25,000, chartered; J. L. Gay, Sr., Pres.; O. H. Gay, Secy.-Treas.

Va., Petersburg—Automobiles.—J. S. Oliver & Co., 101 W. Washington St., capital \$25,000, inceptd.; J. S. Oliver, Pres.; H. A. Burke, V.-P.; J. H. Douglas, Secy.; J. S. Oliver, Treas.; at present will deal in accessories and operate service station.

Va., Richmond—Garage.—W. Wiseman will erect brick garage; cost \$8000.

Va., Richmond—Automobiles.—Craig Motor Corp., capital \$10,000, chartered; F. H. Craig, Pres.; Stuart D. Craig, Secy.-Treas.

W. Va., Huntington—Automobiles.—Bennett Motor Co., capital \$50,000, inceptd. by D. D. Evans, Paul Bennett, I. C. Hicks and others.

W. Va., Huntington—Automobiles.—Bennett Motor Co., capital \$50,000, inceptd. by Geo. D. Bradshaw, D. D. Evans, Paul Bennett and others.

W. Va., Point Pleasant—Garage.—F. H. Buxton and W. R. Thomas will erect garage.

Va., Pulaski—Garage.—Pulaski Motor Car Co. will erect addition to garage; 50x110 ft.; 2 stories; repair department on second floor; electric elevator; J. D. Hufford, contractor.

W. Va., Warwood—Automobiles.—Warwood Motor Co., capital \$5000, inceptd. by Geo. W. Hughes and Thos. J. Debaugh of Warwood, Leo J. Boehm and Wm. A. Smith of Martins Ferry, Ohio, and C. V. Hughes of Wheeling, W. Va.

ROAD AND STREET WORK

Fla., Marianna—City will pave section of Main St. Address The Mayor.

Fla., Perry—Taylor County Comms. let contract Edwards Construction Co. of Tampa to construct 458,537 lin. ft. roadway, 86.94 mi.; 101,545 cu. yds. excavation; 605,406 cu. yds. embankment; 443,693 sq. yds. pavement; 917,974 lin. ft. wood curb, etc.; W. A. Sanders, Engr., Perry. (Noted in Jan. as inviting bids.)

Fla., Starke—City, C. A. Futch, City Clerk, will issue \$18,000 to \$30,000 bonds for street improvements.

Ga., Dalton—City will pave Thornton Ave., Selvidge and Cleveland Sts.; distance, 1500 ft.; width 25 ft.; tarvia, vitrified brick or asphalt. Address The Mayor.

Ga., Thomasville—City contemplates bond issue to pave streets and sidewalks. Address The Mayor.

Ky., Danville—City, W. O. McIntyre, Mayor, will construct brick, sheet asphalt or wood block streets at cost of \$25,000 to \$75,000; date of opening bids probably about May 1; C. C. Creelius, Louisville, Ky., Engr.

Ky., Flat Lick—Knox County will construct approach of Big Richland Rd. to Little Richland Rd.; County Comms. receive bids until Mch. 14. (See Bridges, Culverts, Viaducts.)

Ky., Princeton—Caldwell County, R. L. Gresham, Clerk, will not proceed with lately-noted vote on \$225,000 bonds for roads.

Ky., Tomkinsville—City was lately incorrectly noted to let contract for street improvements; J. M. Jackson, Mayor, states only repairs to be made, and these by day labor.

Md., Baltimore—City will pave sections of Longwood, Presbury, Ashburton, Baker and other streets; 35,000 sq. yds. sheet asphalt paving, 20,000 lin. ft. armored concrete curb and circles, 25,000 cu. yds. grading; Contract No. 151; bids until March 14; John H. Robinette, Pres. Comms. for Opening Streets. (See Machinery Wanted—Paving.)

Miss., Meridian—City, R. L. Banks, City Clerk, will issue \$3155.64 for sidewalk paving.

Mo., Kansas City—City let contract J. E. Welsh of Kansas City to pave 19th St., from McGee St. to Tracy Ave., with brick.

Mo., Ozark—Christian County Comms. will construct crushed rock and red clay roads; cost \$40,000; no contracts; construction superintended by Comms.; Engr., A. J. Howard, Billings, Mo. (In Feb. bonds noted issued.)

Mo., St. Louis—City will improve sections of Union and Genevieve Aves.; bids until Mch. 16; information from Board of Public Service, 325 New City Hall. (See Machinery Wanted—Paving.)

Okla., Frederick—City contemplates construction of 52 blocks vibrolithic paving at cost of \$85,000; H. A. Pessey, Oklahoma City, Engr.

S. C., Anderson—City voted \$125,000 bonds to pave streets; property owners pay one-half of cost. J. H. Godfrey, Mayor. (Noted in Jan. as to vote.)

S. C., Chester—Chester County will vote March 27 on lately-noted \$450,000 bonds to construct roads; previously stated to have accepted report and estimate by L. P. Slatery, Greenville, S. C. Address County Commissioners.

S. C., Laurens—Laurens County votes March 27 on \$300,000 bonds to construct roads. Address County Comms.

Tenn., Centerville—Hickman County Highway Comms. ask bids until March 30 for road improvements, including grading about 40 mi. road, requiring 220,000 cu. yds. excavation, and drainage structures; first work of system under recent \$225,000 bond issue; T. C. McEwen, County Engr., Centerville. (See Machinery Wanted—Road Construction.)

Tenn., Ooltewah—James County will grade, macadamize and chert roads in 5 districts; Highway Comms., T. J. Davis, Chrmn., receives bids until Mch. 22; W. I. Smith, Engr. (See Machinery Wanted—Road Construction.)

Tenn., Mountain City—Johnson County voted \$200,000 bonds to improve roads. Address County Comms. (Lately noted to vote.)

Tex., Bay City—Matagorda County, Matagorda-Wadsworth Precinct, votes Mch. 24 on bonds to shell roads. Address County Comms.

Tex., Beeville—City let contract to pave Washington, Cleveland, Bowie, Heffer and other streets with vibrolithic; about 25,000 sq. yds. paving and 1500 ft. concrete curb; cost \$48,000; John S. Fenner, Engr., Beeville. C. E. Williamson, Mayor. (Noted in Jan. to pave streets.)

Tex., Edna—Jackson County will construct 11.2 mi. of road, 45,400 cu. yds.; 8.6 mi. of outlets, 138,500 cu. yds.; 2 mi. hard surfacing and 5 mi. of fencing; bids until Mch. 12; G. A. Bracher, Engr., 2300 East Ave., Austin. (See Machinery Wanted—Road Construction.)

Tex., Gliddings—Lee County, Road Dist. No. 1, votes Mch. 20 on \$150,000 bonds to construct roads. Address County Comms.

Tex., Huntsville—City is having plans and specifications prepared for paving. Address The Mayor.

Tex., Huntsville—Walker County, Bedias Dist., votes April 7 on \$25,000 bond issue to gravel or pave roads. W. J. Kelly, County Road Engr.

Tex., Yoakum—City Comms. let contract to pave Hugo St. from Lott to Front Sts.

Va., Suffolk—City will pave with concrete sections of Hall Ave., Virginia, Johnson and other streets; width, 18 ft.; estimated cost, \$18,946. Address The Mayor.

W. Va., Fayetteville—Fayette County Court, R. J. Stegall, Clerk, asks bids until April 2 to grade and drain Giles, Fayette and Kanawha Turnpikes, 2.5 mi., Fayetteville Dist.; J. K. McGrath, Dist. Road Engr., Mount Hope, W. Va. (See Machinery Wanted—Road Construction.)

SEWER CONSTRUCTION

Ky., Owensboro—City will improve sewer system; E. B. Shildy, City Engr.

Mo., Mexico—City votes in April on bonds to install septic tank; Wallace Dearing, City Clerk. (Noted in Jan.)

Okla., Billings—City engaged Mackintosh-Walton Engineering Co., 1023 State National Bank Bldg., Oklahoma City, as engineer for sewer system, water-works and electric-light plant; cost \$50,000; will vote on bonds. (Lately noted as having plans prepared.)

Okla., Frederick—City votes Mch. 20 on \$100,000 bonds for sewer, light and water systems construction. Address The Mayor.

Okla., Frederick—City votes Mch. 20 on bonds for sewer construction; J. O. Morrow, City Clerk. (See Water-works.)

Tex., Dallas—City Engineering Dept. has about completed plans and specifications for sewage-disposal pumping station to be built across Trinity River; cost of station and additional mains, \$30,000; Hal Moseley, City Engr.

Tex., Waxahachie—City engaged M. Griffin O'Neil & Sons, Dallas, as engineers for sewage-disposal plant.

W. Va., Hinton—City contemplates extending sewer system. J. B. Lavender, City Engr.

TELEPHONE SYSTEMS

N. C., Danbury—Bell Telephone Co. contemplates constructing telephone system from Rural Hall to Wade Mecum, Moore's and Piedmont Springs, and probably to Danbury.

Tenn., Manchester.—Manchester Home Telephone Co. organized with J. C. Crocker, Prest.; J. P. Buchanan, V.-P.; J. B. McMahon, Secy.; John H. Leming, Treas.

Va., Norfolk.—Chesapeake & Potomac Telephone Co., C. Fred Bonney, Dist. Mgr., contemplates improvements to telephone system; now laying electric cables in underground conduits, each cable carrying 1800 strands of copper wires; later proposes erection of 2-story brick exchange in residential district, to be equipped with 10,000-line switchboard.

TEXTILE MILLS

N. C., Carthage.—Hosiery.—Bismarck Hosiery Mill, capital \$50,000, incptd. by J. R. McQueen, D. A. Blue, P. R. Kennedy and Mary B. Calne.

N. C., East Durham.—Hosiery.—E. H. Emory Co. organized; E. H. Emory, Prest.; C. L. Higbee, Secy.—Treas.; establish lately noted hosiery knitting mill; 24 knitting machines; cost of machinery \$2500; electric drive. (See Machinery Wanted—Knitting Machinery.)

Tenn., Chattanooga.—Hosiery.—Sunshine Hosiery Co., capital \$100,000, incptd. by G. H. Miller, Henry Garant, W. C. Teas and H. Bushnell.

Tenn., Knoxville.—Cotton Yarn.—Cherokee Spinning Co., M. B. Melendy, Prest., let contract to Gallivan Building Co., Greenville, S. C., to build 1-story 267x132 ft. brick construction mill with steel sash; install 5000 spindles and accompanying machinery; J. E. Sirrine, Archt.-Engr., Greenville, S. C. (Lately noted organized with \$150,000 capital, having plans and specifications prepared, etc.)

Va., Danville.—Knit Goods.—Danville Knitting Mills increased capital from \$300,000 to \$650,000.

WATER-WORKS

Ark., Batesville.—City contemplates improving water-works and electric-light plant. Address The Mayor.

Ark., Fayetteville.—City's plans for water filtration plant are not yet completed; Winters & Dove, Engrs., Fort Smith, Ark., advise Manufacturers Record that plans will be ready in about 2 weeks, and it is contemplated to receive bids about April 15; alternative bids on filtration plant complete, daily capacity 1,000,000 gals., and twin sedimentation basins of 250,000 gals. capacity each; reinforced concrete construction. (Noted in Dec.)

Ark., Paris.—City is having preliminary surveys made for installation of water-works and electric-light plant; Winters & Dove, Engrs., Fort Smith, Ark.

Ga., Thomasville.—City contemplates bond issue to improve water-works. Address The Mayor.

Ky., Murray.—City, Henry E. Holton, Mayor, asks bids until Mch. 29 on water-works improvements, including furnishing oil engines, pumps, well-working equipment and power-house; Xavier A. Kramer, Magnolia, Miss., Engr. (See Electric Plants; see Machinery Wanted—Water-works and Electric Lights.)

La., Colfax.—City is considering construction of water-works. Address The Mayor.

La., De Ridder.—City receives bids March 14 for constructing water-works, pumping station and furnishing equipment, etc., in connection with recently noted plan to build 1,000,000-gal. water-works; machinery to include oil engines, pumps, deep wells, pump house, reservoir, etc.; plans and specifications at office of C. C. Davis, Mayor; specifications upon application to Xavier A. Kramer, Engr., Magnolia, Miss. (See Machinery Wanted—Pumping Station.)

Okla., Billings.—City engaged Mackintosh-Walton Engineering Co., 1023 State National Bank Bldg., Oklahoma City, as engineer for water-works, sewer system and electric-light plant; cost \$50,000; will vote on bonds. (Lately noted as having plans prepared.)

Okla., Enid.—City contemplates voting in May on \$50,000 bonds to construct water-works. F. W. Brooks, Supt.

Okla., Faxon.—City will vote Feb. 20 on \$5500 bonds for water-works. Address The Mayor.

Okla., Frederick.—City votes Mch. 20 on \$100,000 bonds for water, light and sewer system construction; J. O. Morrow, City Clerk, advises Manufacturers Record: It is contemplated to expend \$45,000 on water-works extensions; capacity 500,000 gals.; pipe 8 in. from springs; reservoir cost about \$10,000; H. A. Pessey, Engr.

Okla., Red Rock.—City issued \$22,000 bonds

to construct water-works. Address The Mayor.

S. C., Pamplico.—Dargan-Wagoner Co., lumber manufacturer, contemplates installation of fire-protection equipment, including hose, hydrants, water main, 15,000-gal. tank and 10,000-gal. tank; also tower. (See Machinery Wanted—Water-works (Fire Protection).)

Tex., Iowa Park.—City contemplates construction of water-works; J. F. Boyd, Mayor.

Va., Salem.—City, R. H. Bruce, Engr., has purchased pipe for lately-noted construction to cost \$10,000; renewal of water mains.

WOODWORKING PLANTS

Ala., Birmingham.—Handle.—W. S. Allen, 1325 Jefferson County Bldg., advises Manufacturers Record he contemplates erection of factory for manufacture of pick and hammer handles. (See Machinery Wanted—Woodworking (Handle) Machinery.)

La., Echo.—Shingles.—Echo Shingle Mill Co., capital \$5000, incptd.; J. Abel Beauregard, Prest.; Homer P. LeBlanc, V.-P.; B. Eustis Ducote, Secy.—Treas.

La., Slidell.—Veneer and Boxes.—S. T. Aleus & Co., Hagan Ave. and New Basin, New Orleans, will erect mill-construction building covering area of 204x308 ft.; cost \$20,000; W. P. Craft, Ellisville, Miss., Archt. and Constr. Engr.; install veneer and box machinery, cost \$14,000; daily capacity 20,000 ft. gum logs into boxes.

Miss., Columbia.—Box Shooks.—Price Veneer Co. (F. V. B. Price and Virgil F. Price) will erect mill-construction building covering area of 190x250 ft., cost \$16,000; W. P. Craft, Ellisville, Miss., Archt. and Constr. Engr.; machinery (cost \$13,500) includes 300 H. P. boilers, veneer lathes, resaws, etc.; daily capacity 15,000 to 25,000 ft. gum logs in box shooks.

Miss., Meridian.—Veneer.—Martin & Son (care of Cliff Williams) will build veneer factory; have 4-acre site.

Miss., Winona.—Stave Bolts.—A. W. McDonough and others will build stave bolt factory.

S. C., Sumter.—Staves and Heading.—Sumter Stave & Heading Co., capital \$10,000, incptd. by H. R. McNeill and W. I. Whitehead.

Tenn., Centerville.—Barrels.—A. J. Robertson, lately noted purchasing 1400 acres timber and to erect stave and saw mill; will open bids about April 1 on mill sheds; install 35 or 40 H. P. boiler and engine. (See Machinery Wanted—Barrel Machinery; Engine and Boiler.)

Va., Galax.—Tables.—W. H. Taylor, Ed Cox and Jas. Kegley are promoting erection of table factory; cost of buildings and equipment, \$15,000.

FIRE DAMAGE

Ark., Mayflower.—Morrilton Cottonseed Oil & Gin Co.'s seed-house; loss \$4000.

Ark., McCrory.—C. W. McCrory's dwelling; loss \$6000.

Ark., Conway.—Rev. C. H. Nelson's dwelling; loss \$3000.

Fla., New Augustine.—Howard H. Green's residence.

Fla., Palmetto.—D. M. Courtney's packing plant, loss \$5000; Victor Nettles' packing plant, loss \$4000.

Fla., Pensacola.—T. E. Williams' 2 dwellings.

Fla., Starke.—D. C. Cason's dwelling and outbuildings on farm near Starke.

Ga., Manchester.—J. W. Freeman's residence in East Manchester; loss \$3000.

Ga., Preston.—E. E. Cook's residence 3 mi. from Preston; loss \$3000.

Ky., Flemingsburg.—C. O. Alton's store building.

Ky., Middleboro.—Shelton Evans' residence; loss \$7000 to \$8000.

Md., Annapolis.—Annie Iglehart's building; Benjamin Hyde's store; loss \$5000.

Md., Baltimore.—Eugene E. Clemens' residence, 617 Walpert Ave.; Geo. W. Hagger's residence, 617 Walpert Ave.

Md., Baltimore.—Kofin & Pollock's printing plant at 205 W. Baltimore St.

Md., Detour.—Theophilus Hahn's residence.

Miss., Marion.—Thomas Blackman's residence and barn.

N. C., Bosts Mills.—School building. Address School Trustees.

N. C., Mooresville.—Templeton Williams Co.'s ginhouse.

Okla., Grandfield.—Maple & Green's electric-light and ice plants.

S. C., Clinton.—John T. Blakely's residence.

S. C., Cowpens.—Cowpens Cotton Oil Co.'s cotton gin; loss \$10,000.

Tenn., Dyersburg.—Bose Pillow's building, occupied by Ben Stamm; loss \$7000.

Tex., Cedar Hill.—J. M. Ramsey's buildings, occupied by F. and M. Bank, S. P. Lovern and Vincent Bros.

Tex., Cumby.—I. O. O. F. Bldg.; A. W. Denton & Co's store; J. A. Coppedge's store; loss \$6000.

Tex., Dallas.—W. E. Looney's residence, 1445 Inglewood St.; G. W. Graham's residence, 1441 Inglewood St.; loss \$7500.

Tex., Denison.—M. T. Mathes' garage; loss \$20,000.

Tex., Ennis.—Bohemian Sokol Hall, 2½ mi. east of Ennis; loss \$7000.

Tex., Kirbyville.—Kirbyville High School and auditorium; loss \$8000. Address School Trustees.

Tex., Victoria.—C. H. Stoll's grist mill at Bridge and Church Sts.; loss \$1000.

Tex., Waco.—Richard Jurney's residence; loss \$5000.

Tex., Waco.—Hutchenrider's residence; loss \$4000; negro school building at 7th and Harrison Sts.; loss \$6000. Address The Mayor.

Tex., Waco.—Central Presbyterian Church; loss \$15,000; Rev. E. E. Ingram, pastor.

Tex., Waco.—W. W. Cameron & Co.'s building occupied by Hinsley & Smith Transfer Co.; loss on building \$10,000.

Tex., Waxahachie.—N. W. Pierce's barber and tailor shop; C. F. Winn's office building; loss \$5000.

Tex., Dallas.—Old Mill Theater, owned by Ed Tom Randle; loss \$25,000 to \$30,000; Laurence Stuart, Mgr. (Lately noted owned by Hulsey Amusement Co.)

Va., Amherst.—J. W. Beard's livery stable; Ainslie Martin Co.'s lumber yard; Hill Buggy & Wagon Co.'s plant; building owned by H. C. Page; loss \$8000 to \$10,000.

Va., East Stone Gap.—Southern Ry. System's depot; B. Herman, Ch. Engr., M. W. and S. Lines East, Charlotte, N. C.

Va., Norfolk.—Star Mfg. Co.'s sewing factory; loss on building, owned by Coca-Cola Bottling Works (A. F. Cathey, Mgr.), \$3000.

Va., Richmond.—E. L. Taylor & Co.'s store; loss on building, owned by Hessberg Estate, \$10,000.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

D. C., Washington.—Harry Wardman, 1430 K St. N. W., has plans by F. R. White, 1403 K St. N. W., Washington, for apartment-house at 3235 16th St. N. W.; cost \$200,000; also business building at 607 14th St. N. W.; cost \$30,000; construction by owner.

D. C., Washington.—Boss & Phelps, 714 14th St. N. W., are having plans prepared for apartment-house in B St. between 3d and 4th Sts. N. E.; 2 stories; brick; tile and slag roof; 10 apartments of 2 to 5 rooms and bath.

Fla., Daytona.—C. M. Putnam will erect 5-story apartment-house; 60 suites; 150 rooms; fireproof; brick; hot-water heat; elevators.

Fla., Miami.—Edwin Nelson, 1107 C. Miami, has plans by E. A. Nolan, Miami, for rooming-house on Ninth St.; 46x146 ft.; concrete; composition roof; pine floors; gas heat; electric lights; cost \$25,000; construction begins about April 15. Address owner.

Fla., St. Petersburg.—H. W. Bryan, Rowland Court, has plans by T. M. Bryan, Lakeland, Fla., for lately-noted apartment-house; 50x100 ft.; 3 stories; brick veneer; Barrett specification roof; wood floors; gas-steam radiators; cost \$12,000; construction begins May 1. (See Machinery Wanted—Radiators; Plumbing Fixtures.)

Fla., Tampa.—Mrs. Margaret W. Anthony, Chicago, is reported to erect \$5000 apartment-house in Hyde Park.

La., New Orleans.—H. M. Field will erect apartment-house; 4 suites; stucco exterior; interior finish of enameled woodwork; hardwood floors; Walter Cook Keenan, Archt., New Orleans.

La., New Orleans.—C. S. Mathews, Mathews, La., has plans by Mose H. Goldstein, Title Guarantee Bldg., New Orleans, for apartment-house; 2 stories and basement; brick and stucco; 6 suites; completion by Oct. 1.

Md., Baltimore.—M. Lemuel T. Cooksey will erect store and apartment building. (See Stores.)

Mo., Kansas City.—J. R. Ingraham will erect frame flat; cost \$4000.

Mo., Kansas City.—Francis Clark will remodel 2 apartments at Admiral Blvd. and The Paseo.

Mo., Kansas City.—Geo. C. Hill will erect 3 apartment flats.

N. C., Asheville.—J. C. Arbogast will erect 22-room apartment dwelling on Courtland St.; 3 stories; cost \$20,000; also 8-room residence; cost \$5000; is reported to make total expenditure of \$75,000 at "Arboreale."

Okla., Oklahoma City.—R. A. Rogers does not contemplate erecting apartment-house. (Recent report incorrect.)

Tenn., Maryville.—Dr. R. W. Wells and H. G. Tarvin will erect store, office and apartment building. (See Stores.)

Tenn., Nashville.—F. W. Hooper, 313 Broadway, has plans by Geo. D. Waller, 57 Arcade, Nashville, for 18-family apartment-house;

brick and concrete; built-up composition roof; concrete and wood floors; low-pressure steam heat; city lighting; cost \$60,000. (Lately noted.)

Tex., Chillicothe.—Miss Lillie Kerlet will erect apartment-house; 2 stories; 4 suites; electric fixtures.

Tex., Dallas.—Edw. A. Faust, St. Louis, will erect apartment-house.

Tex., El Paso.—H. J. McMullen will erect 20-room tenement; cost \$3500.

Tex., El Paso.—Mrs. E. Escalada will erect 12-room tenement; cost \$3500.

Tex., El Paso.—E. L. Payton will erect 20-room tenement; cost \$3500.

Tex., El Paso.—Mrs. Juana Mayer will erect 16-room tenement; cost \$3600.

Va., Norfolk.—Farant Investment Corporation will erect 2-story brick flat.

Va., Norfolk.—Harry Nixdorf will erect two 2-story brick tenements; gravel roof; wood floors; cost \$4000.

W. Va., Welch.—Cooper, Catron & Sammers have plans by Pedigo & Garry, Bluefield, W. Va., for apartment-house; 8 apartments; 2 stories on first floor; 52x72 ft.; ordinary construction; brick walls; Barrett roof; hardwood floors; hot-water heat; electric lights; cost \$18,000; contract let about May 1.

ASSOCIATION AND FRATERNAL

Ark., Blytheville.—B. P. O. E. contemplates erecting Elks' Home.

Ga., Atlanta.—Fulton Bag & Cotton Mills is reported to expend \$350,000 for improvements, to include Y. M. C. A. plant consisting of four buildings, gymnasium, library, auditorium to seat 500, dormitory, recreation park, athletic field, tennis courts, baseball diamond, track, outdoor gymnasium; also 100 dwellings for employees to cost about \$2000 each. (Previously noted.)

Okla., Okmulgee.—Knights of Columbus Building Assn. organized to erect 6-story office building.

Tex., Galveston.—Galveston Nest No. 128, Order of Owls, A. Lucas, Prest., contemplates erecting \$40,000 structure.

Tex., Quanah.—Woodmen of the World will erect 2-story business and lodge building.

Tex., Waco.—Order of Eastern Star is reported to erect \$75,000 structure.

Va., Harrisonburg.—B. P. O. E. No. 450 will remodel third floor for lodgeroom and erect addition for banquet hall and kitchen; cost \$3000.

BANK AND OFFICE

Ala., Athens.—Farmers & Merchants Bank opens bids about March 15 to remodel building for bank; low-pressure steam heat; Ben Price, Archt., 518 Empire Bldg., Birmingham, Ala. (See Machinery Wanted—Bank Fixtures.)

Ala., Birmingham.—First National Bank, Oscar Wells, Prest., is reported to expend \$50,000 to remodel bank building; new furnishings; interior finish to be marble with mahogany paneling.

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D. C., Washington.—Home Savings Bank, 7th and Massachusetts Ave. N. W., is reported having plans prepared by Clarke Waggaman, 1211 Connecticut Ave., Washington, for bank building; 6 stories; 35x120 ft.; cost about \$100,000.

Ga., Macon.—Lamar, Taylor & Riley Drug Co. will convert store into office building. (See Stores.)

Ky., Louisville.—Louisville Trust Co. will expend \$2500 for addition to building at 5th and Market Sts.

La., Alexandria.—First National Bank plans to erect 8 or 10-story building; reported cost \$150,000 to \$200,000; bank wires Manufacturers Record: "Propose to erect bank and office building some time in future; no definite plans as yet."

La., De Ridder.—Long-Bell Lumber Co. will erect office and store building. (See Stores.)

N. C., Rocky Mount.—First National Bank is having plans prepared by B. H. Stephens & Co., Wilmington, N. C., for remodeling 3-story building; will erect 2 additional stories, install new fixtures, vault, safety deposit boxes, etc.; cost after completion, \$100,000.

N. C., Monroe.—Savings Loan & Trust Co. will erect building on Main St. (Lately noted as Monroe, La.)

N. C., Monroe.—First National Bank will erect building. (Lately noted as Monroe, La.)

R. C., Charleston.—C. P. and A. P. Airmar will erect office building; cost \$3500.

Tenn., Maryville.—Dr. R. W. Wells and H. G. Tarvin will erect store, office and apartment building. (See Stores.)

Va., Richmond.—Federal Reserve Bank, J. S. Ray, Governor, will receive competitive plans until April 17 from following architects, according to program prepared by Waddy B. Wood, 816 Connecticut Ave. N. W., Washington, D. C., for bank building: Noland & Baskerville, Richmond; Carnel & Johnston, Richmond, associated with Alfred C. Bosson, New York; Parker, Thomas & Rice, Still, Buckler & Fenhagen; both of Baltimore; Weary & Alfred, Chicago; John Russell Pope; James Gamble Rogers; both of New York; Donn & Deming, Washington, D. C.

W. Va., Charleston.—W. F. Gray, 133 Main St., and J. B. Kay, Fourth Natl. Bank Bldg., are reported planning to erect theater and office building. (See Theaters.)

CHURCHES

Ark., Marshall.—Methodist Church will erect annex to building. Address The Pastor.

Ga., Milner.—Methodist Episcopal Church South has plans by Mr. Brisendine, Griffin, for building; 40x60 ft.; granite and brick; metal roof; wood floors; electric lights; cost \$600; furnace heat, \$200; contract let Mch. 5. Address C. A. Norton, Milner. (Lately noted.)

Ky., Georgetown.—Presbyterian Church, Rev. J. D. Wallace, Pastor, will erect lately noted Sunday-school addition; about 35x56 ft.; brick; stone or concrete foundation; probably pine floors; electric lights; construction begins last of March or first of April; cost about \$5000. Address The Pastor. (See Machinery Wanted—Partitions; Heating; Lighting; Seating; Plumbing Equipment.)

Ky., Louisville.—Ormsby Avenue Baptist Church has plans by H. F. Hawes, Louisville, for building; 70x30 ft.; brick, stone and concrete; composition roof; wood floors; city electric lights; cost \$20,000; furnace heat, \$500. (Lately noted.)

La., Benton.—Methodist Church will erect building. Address The Pastor.

La., Lake Charles.—Presbyterian Church will erect building; cost \$30,000. Address The Pastor.

La., Thibodaux.—Catholic Congregation will erect building. Address The Pastor.

Miss., Crystal Springs.—Baptist Church is having plans prepared by Xavier A. Kramer, Magnolia, Miss., for \$15,000 building.

Miss., Meridian.—Fifteenth Avenue Baptist Church, Rev. E. D. Solomon, Pastor, will probably let contract about March 15 to erect building; 113.6x104.6 ft.; ordinary or mill construction; slate or composition roof; hot-air or steam heat; cost \$25,000; R. H. Hunt, Archt., Chattanooga, Tenn. Address E. M. Culpepper, Meridian.

N. C., Denton.—Methodist Protestant Church will erect brick building; 10 Sunday-school rooms. Address The Pastor.

N. C., Tarboro.—Howard Memorial Presbyterian Church is having plans prepared by R. H. Stephens & Co., Wilmington, N. C., for

Sunday-school building; 3 stories; 62x72 ft.; brick; stone trimmings; seating capacity 1000.

N. C., Winston-Salem.—Grace Presbyterian Church (colored), S. F. Wentz, Pastor, plans to erect \$11,000 building.

Okla., Cyril.—Christian Church will erect brick building. Address The Pastor.

Okla., Vinita.—Methodist Church plans to erect \$50,000 building. Address The Pastor.

Tenn., Greenfield.—Presbyterian Church will erect building to replace structure lately noted damaged by fire; brick; possibly steam heat; electric lights; cost \$15,000. Address P. D. Harris.

Tex., Bryan.—Free Will Baptist Church plans to erect building to cost \$15,000. Address The Pastor.

Tex., Childress.—Methodist Church will erect annex; 2 stories and basement; 31x115 ft.; construction begins about May 15; cost \$15,000.

Tex., Dallas.—First Methodist Church is having plans prepared by Hubbell & Greene, N. Texas Bldg., Dallas, for church and Sunday-school buildings; English Gothic type; estimated cost \$300,000. (Lately noted.)

Tex., Dallas.—Greek Orthodox Congregation (Geo. Shropoulos and others) adopted plans for building at Sanger Ave. and Riggs St.; frame; cost \$8000.

Tex., Gordonville.—Methodist Church will erect building. Address The Pastor.

Tex., Lewisville.—First Presbyterian Church has plans by T. J. Galbraith, Dallas, for building; 54x56 ft.; brick and stucco; metal shingle roof; wood floors; hot-air heat; electric lights; cost \$5000; bids opened about Apr. 1; construction begins about Apr. 15. Address F. F. Beddo. (Lately noted.)

Va., Coeburn.—Coeburn Baptist Church, Rev. A. B. Brooks, Pastor, has plans by C. B. Kearfott, Bristol, Tenn., for building; 1 story and basement; 40x70 ft.; brick walls; wood-floor joists; asphalt shingle roof; low-pressure steam heat; city electric lights; bids opened about Mch. 20; cost \$10,000. (Lately noted.)

W. Va., Charleston.—St. John's Episcopal Church receives bids about March 15 to remodel and erect addition to building; 1 story; cost \$60,000; H. R. Warne, Archt., Masonic Temple Bldg., Charleston.

W. Va., Charleston.—Union Mission Settlement, P. D. Withrew, Supt., has plans by J. L. Montgomery, 404 Coyle-Richardson Bldg., Charleston, for home and church; 4 stories; 56x100 ft.; fireproof; tar and gravel roof; cement-finish floors; low-pressure steam heat; cost \$45,000.

W. Va., Martinsburg.—First M. E. Church, Rev. R. L. Wright, Pastor, is having plans prepared by Wm. J. Palmer, 13 Warder Bldg., Washington, D. C., for Sunday-school building. (Lately noted.)

CITY AND COUNTY

Ala., Altoona.—City Hall and Jail.—City will soon let contract to erect building for city hall and jail; first floor for store; cost \$5000.

Ark., Magnolia.—Jail.—Columbia County will erect jail; bids opened March 5. Address County Clerk.

Fla., Bradentown.—Library.—City will erect \$10,000 Carnegie library; Mrs. T. J. Bachman, Chrmn. Library Board.

Ga., Alma.—Jail.—Bacon County votes June 14 on \$10,000 bonds to erect jail; T. B. Taylor, Ordinary. (Lately noted under Ga., Waycross.)

N. C., Asheville.—Fire Station.—City has plans by Chas. N. Parker, Asheville, to remodel fire station in City Hall; steel girders 78x65 ft., reinforced concrete floor, etc.; cost \$5000; bids opened about March 15. (Lately noted.)

N. C., Hickory.—Library.—City votes April 2 on proposition to erect Carnegie Library; cost about \$12,000.

Tex., Waco.—Fire Station.—City votes Apr. 3 on \$35,000 bonds to rebuild several fire stations, motorize and equip fire department. Address The Mayor.

Tex., Waco.—Fire Station.—City votes Apr. 3 on \$35,000 bonds to motorize and equip fire department, rebuild several fire stations, etc. Address Mayor Dollins.

Va., Norfolk.—Office.—Board of Control receives bids until Mar. 10 to furnish material and erect addition to building occupied by Clerk of Corporation Court; plans, specifications and other information from office Ferguson, Calrow & Wrenn, Archts., Virginia Nat'l Bank Bldg., Norfolk; W. H. Taylor, Jr., City Engr.

COURTHOUSES

Ga., Alma.—Bacon County votes June 14 on \$30,000 bonds to erect courthouse; T. B. Taylor, Ordinary. (Lately noted under Ga., Waycross.)

Tex., Brownwood.—County Commrs. will expend, it is reported, \$60,000 to remodel courthouse.

Va., Chatham.—County Commrs. are having plans prepared by Pritchett & Henderson, Danville, Va., for remodeling and erecting addition to courthouse; cost \$10,000.

W. Va., Charleston.—Kanawha County Commrs. receive bids until Apr. 2 for material and erection of addition to courthouse; separate bids for plumbing and heating; plans and specifications at office County Commrs. and H. Rus Warne, Archt., Charleston.

DWELLINGS

Ala., Tuscaloosa.—Frank Fitts will erect residence.

D. C., Washington.—Chas. W. King, 216 Southern Bldg., will erect dwelling at 1006 Webster St. N. W.; cost \$16,000; plans and construction by owner.

D. C., Washington.—D. J. Dunigan will erect 2 dwellings at 5508-11 39th St. N. W., and 2 at 3913-15 Morrison St.; cost \$22,000; construction by owner.

D. C., Washington.—G. W. Barkman, 900 Massachusetts Ave. N. E., will erect dwelling in Saul's addition; 2 stories; 7 rooms; tile bath; cost \$5000.

D. C., Washington.—James S. Moore has plans by Clinton M. Moore, 3503 Wisconsin Ave., Washington, for residence at 1418-20 Irving St. N. E.; cost \$7000; construction by owner.

D. C., Washington.—H. L. Thornton, 301 Southern Bldg., Washington, will erect frame dwelling 7223-27 Blair Rd. N. W.; cost \$3000.

D. C., Washington.—H. R. Howenstein, 1314 F St. N. W., has plans by W. E. Howser, 61 New York Ave. N. E., Washington, for 4 dwellings at 1359-65 Morse St. N. E.; 2 stories; brick; tin roof; pine floors; hot-water heat; electric lights; cost \$8000. (Lately noted.)

Fla., De Land.—Robt. H. Peyton is receiving bids to erect 10-room colonial residence; F. M. Miller, Archt.

Fla., De Land.—S. O. Holmes, Huntsville, Ala., will erect residence.

Fla., Jacksonville.—A. L. Coffee will erect 2 frame dwellings; cost \$3300.

Fla., Jacksonville.—J. E. Whittington will erect 2-story brick building on Adams St.; cost \$4800.

Fla., St. Augustine.—Mrs. May Gale will erect residence on Charlotte St.; bungalow type.

Fla., Jacksonville.—H. Taylor & Son will erect 2-story frame residence; cost \$4000.

Fla., Jacksonville.—T. E. Boyd will erect 2-story frame residence; cost \$3650.

Fla., St. Petersburg.—Frank Dubois, Green Bay, Wis., will erect stucco residence.

Fla., St. Petersburg.—A. M. Galaher is reported to erect bungalow on 6th St.

Fla., St. Petersburg.—Martha J. Dunsman plans to erect residence on 18th St.

Fla., West Palm Beach.—David M. Kirk, Pittsburgh, Pa., is reported to erect residence; bungalow type.

Ga., Atlanta.—G. P. Turner will erect 2-story brick-vener residence; cost \$6000; day labor.

Ga., Atlanta.—W. W. Orr will expend \$3500 to repair residence damaged by fire.

Ga., Atlanta.—Fulton Bag & Cotton Mills is reported to erect 100 dwellings to cost about \$2000 each. (See Association and Fraternal.)

Ga., Augusta.—Miss Emily R. Boehler, New York, is having plans prepared by G. Lloyd Preacher, Augusta, for residence.

Ga., Augusta.—Wm. H. Barrett is having plans prepared by G. Lloyd Preacher, Augusta, for residence.

Ga., Louisville.—M. C. Barwick is having plans prepared by G. Lloyd Preacher, Augusta, Ga., for \$10,000 residence.

Ga., Thomson.—John S. Boyd is having plans prepared by G. Lloyd Preacher, Augusta, Ga., for \$15,000 residence.

Ky., Anchorage.—Eugene J. Straus, 412 W. Market St., will erect bungalow; 7 rooms; hollow tile and stucco; non-inflammable roofing; wood floors; hot-water heat; city lighting; cost \$5000. (Lately noted.)

Ky., Lexington.—C. B. Ross will erect 6 bungalows; cost \$4000 each.

Ky., Louisville.—W. S. Mills will erect stucco dwelling; cost \$3000.

Ky., Louisville.—M. J. Murphy will erect 2 brick dwellings; also repair brick stores; cost \$7000.

Ky., Louisville.—Henry C. Yunker will erect residence; 6 rooms; bungalow style; brick veneer; stone foundation; asphalt shingle roof; hardwood floors; furnace heat; electric lights; cost \$3400; plans and construction by owner. (Lately noted.)

Ky., Seco.—South East Coal Co. will erect about 40 dwellings at Seco and 100 additional miners' houses at LaViers.

La., New Orleans.—Chester Lob will erect bungalow on Adams St.

La., New Orleans.—Eureka Homestead Society will erect two 1-story frame residences; cost \$5500.

La., New Orleans.—Rowland Otts will erect double 2-story residence; cost \$7000.

La., New Orleans.—J. M. Solari will erect 1-story frame residence; cost \$3700.

Md., Baltimore.—Raymond G. Sheppard, 4203 Penhurst Ave., will erect residence at Garrison and Hawthorne Aves., Forest Park; 2 stories; stucco; slate roof; conservatory.

Md., Baltimore.—Louis Pincus, 2147 Eagle St., will erect four 2-story and mansard roof dwellings on northwest side Whittier St. near Auchentoroly Ter.; 21x100.3 ft.; total cost \$9500; plans and construction by owner.

Md., Baltimore.—E. J. Storck, 623-24 Munsey Bldg., has plans by Harry Storck, also at Munsey Bldg., for 12 2-story brick dwellings, 300x322 E. 33d St.; 15x53 ft.; cost \$36,000; construction by owner.

Md., Chevy Chase.—Fulton R. Gordon, 317-18 Colorado Bldg., Washington, D. C., will erect 2-story residence and garage; hollow tile and stucco; tile roof; 12 rooms and 5 baths; cost \$25,000; plans ready about April 1.

Md., Frederick.—A. A. Kauzor, 113-A W. 3d St., will erect lately noted residence; 30x33 ft.; garage and stable, 22x44 ft.; stone, clapboards and wood floor construction; red shingle, tile or slate roof; wood floors; steam or vapor heat; electric lights; cost \$5000; plans by owner, who will sublet contracts. (See Machinery Wanted—Roofing.)

Md., Roland Park.—Eugene Wyatt, 606 Edgevale Rd., will erect residence at 208 Longwood Rd.

Miss., Biloxi.—W. M. Lampton, Magnolia, Miss., is having plans prepared by Xavier A. Kramer, Magnolia, for residence.

Mo., Kansas City.—Robt. H. Bowman has plans by Shepard, Farrar & Wisner, Kansas City, for residence; cost about \$40,000.

Mo., Kansas City.—F. M. Meisburger will erect 5 frame dwellings; cost \$10,000.

Mo., Kansas City.—Crescent Investment Co. will erect three 1-story frame dwellings; cost \$3000.

Mo., Kansas City.—F. M. McDermond will erect 2-story brick dwelling and garage; cost \$26,000.

Mo., Kansas City.—J. M. Smithers will erect 2 stucco-veneer dwellings; cost \$3000.

Mo., Kansas City.—J. O. Wade will erect 2-story stucco and stone veneer dwelling; cost \$5000.

Mo., Kansas City.—W. R. Jewell will erect residence; 2 stories; stucco veneer; cost \$5000.

N. C., Charlotte.—Frank F. Jones will erect 3 bungalows; cost \$5500.

N. C., Greensboro.—Dr. J. T. J. Battle will erect 8-room residence; cost \$3000; plans to erect several other dwellings.

N. C., Winston-Salem.—Mrs. E. W. Oliver will erect \$3000 residence.

Okla., Haskell.—Cleat Peterson, First National Bank, will erect residence; brick veneer; 12 rooms; M. T. Hardin, Archt., Muskogee, Okla.

Okla., Madill.—Mal Thomas will erect 6-room residence.

Okla., Oklahoma City.—H. D. Garrison will erect four 1-story frame dwellings; cost \$10,000.

Okla., Oklahoma City.—Nichols & Chandler will erect 2-story frame residence; cost \$4000.

Okla., Oklahoma City.—E. C. Ross will erect 2-story frame dwelling; cost \$5000.

Okla., Oklahoma City.—J. S. James will erect brick store building; cost \$4600.

Okla., Oklahoma City.—Clark Hogan will erect 1-story frame dwelling; cost \$3500.

Okla., Oklahoma City.—W. W. Connor will erect three 1-story frame dwellings; cost \$5700.

Okla., Purcell.—J. E. Bell will erect 8-room residence.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

S. C., Barnwell.—Edgar H. Brown is having plans prepared by G. Lloyd Precher, Augusta, Ga., for \$5000 residence.

S. C., Charleston.—Mrs. L. Schwacke will erect \$7000 residence.

S. C., Charleston.—T. W. Worthy will erect residence; cost \$5000.

S. C., Charleston.—Mrs. Emma Bohlen will erect \$5000 dwelling.

S. C., Beaufort.—William Keyserling has plans by Levy & Clarke, Savannah, for residence; colonial style; fluted porch columns; 9 rooms; sleeping porch; sidewalk in front and walls about lawn and garden; frame; tin and asbestos shingles or slate roof; 2-pipe vapor vacuum heat; knob and tube lighting system; indirect fixtures; day labor; owner will buy materials.

S. C., Edgefield.—R. T. Hill is having plans prepared by G. Lloyd Precher, Augusta, Ga., for \$6500 residence.

Tenn., Nashville.—South Nashville Improvement Co. has plans by T. Haynes Harvill, Nashville, for residence at 533 Fifth Ave., South; 9 rooms; brick and wood; composition shingle roof; hardwood floors; cost \$3000; hot-air heat, \$250; construction by owner. (Lately noted.)

Tenn., Knoxville.—Sam T. Buffet will erect residence; frame; 2 stories; 8 rooms; cost \$5000.

Tenn., Nashville.—Percy Sharpe, Belmont Ave., Nashville, has plans by George D. Waller, 57 Arcade, Nashville, for residence; 8 rooms; brick; slate roof; wood floors; steam heat; city lights; cost \$8500; bids opened Mch. 17. (Previously noted.)

Tex., Austin.—J. B. Bell will erect 1-story frame dwelling; cost \$3000.

Tex., Austin.—Mrs. M. F. Pope and J. B. Pope will erect six 1-story frame dwellings at Garden and Holly Sts.; cost \$5000.

Tex., El Paso.—J. E. Monroe will erect double bungalow; cost \$4750.

Tex., Fort Worth.—J. L. Walker will expend \$3000 to repair brick residence at 2200 Hemphill St.; cost \$3000.

Tex., Fort Worth.—Rhodes-Dines Building Co. will erect 2-story brick residence; cost \$8750.

Tex., Fort Worth.—Wm. B. Fishburn will erect residence; also construct ½-mi. private race track; Geo. E. Vinnedge, landscape architect and engineer.

Tex., Fort Worth.—S. E. Ross will erect 2 frame residences; cost \$3500.

Tex., Fort Worth.—T. J. Faught will erect \$5000 brick-veneer residence.

Tex., Groesbeck.—Jeff Ferrill will erect residence.

Tex., Groesbeck.—C. S. Bradley will erect brick residence.

Tex., Groesbeck.—Joshua Wood will erect three 5-room dwellings.

Tex., Houston.—A. A. Johnson will erect \$12,000 residence; plans prepared.

Tex., Quanah.—L. T. Lewis will erect residence.

Va., Richmond.—Mrs. Annie E. Sampson will erect \$6000 frame residence.

Va., Martinsville.—Panill Rucker is having plans prepared by Pritchett & Henderson, Danville, Va., for rebuilding residence lately noted damaged by fire at loss of \$100,000.

Va., Norfolk.—C. C. Fitch will erect two 2-story frame residences; cost \$4400.

Va., Norfolk.—S. L. McGonigal will erect brick residence; cost \$4500.

Va., Roanoke.—C. H. Brent will erect 2-story brick-cased dwelling; cost \$4500.

Va., Norfolk.—Jeffries & Co., Inc., Bank of Commerce, will erect residence at 34th St. between Colley and Killam Aves.; 22½x40½ ft.; frame; certainated shingle roof; pine floors; hot-water heat; cost \$3500.

Va., Richmond.—R. M. Hill will erect 2-story frame dwelling; cost \$3250.

Va., Richmond.—O. J. Davis will erect 2 dwellings; cost \$10,000.

Va., Richmond.—Mrs. Lizzie E. Price will erect frame dwelling; cost \$3500.

Va., Richmond.—J. R. Singrey will erect 2-story frame and stucco residence; cost \$4000.

Va., Richmond.—W. J. Gilman will erect 17 dwellings; brick; cost \$50,000.

Va., Roanoke.—C. H. Brent will erect 2-story brick-cased dwelling; cost \$4500.

W. Va., Huntington.—W. A. Parsons will erect residence.

GOVERNMENT AND STATE

S. C., Lancaster.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising

Arch., Washington, D. C., opens bids April 11 to construct postoffice; drawings and specifications from custodian of site, Lancaster, and Mr. Wetmore at Washington.

Tex., Stamford.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Arch., Washington, D. C., opened bids to construct postoffice; W. D. Lovell, Minneapolis, Minn., low bidder at \$40,576 for limestone; Oats, Dyer & Sullivan, Stamford, only bidder for sandstone at \$55,450. (Lately noted.)

HOSPITALS, SANITARIUMS, ETC.

Ala., Mobile.—City is having plans prepared by Geo. B. Rogers, Mobile, for operating-room at City Hospital; brick, steel and glass; cost \$10,000. (Lately noted.)

La., New Orleans.—R. C. Dertvaux, Acting Custodian, U. S. Marine Hospital, receives bids until Mar. 16 for repairs at hospital; specifications from custodian only.

S. C., Charleston.—Todd, Simons & Todd, Archts., 63 Broad St., Charleston, receive bids until March 29 to erect (complete) 4-story hospital; also bids for building alone, and separate bids for heating, plumbing, electric wiring and elevators; plans and specifications at office architects as above; Dr. R. S. Cathcart, Chrmn. Building Com. (Previously noted.)

HOTELS

Ga., Atlanta.—Asa G. Candler, Inc., acquired Hotel Ansley; is reported to construct 13-story 250-room addition to cost \$300,000; roof garden to seat 1500; baths for each room; construction similar to present structure. Purchaser wires Manufacturers Record: "Details of proposed addition not yet worked out."

Ky., Dry Ridge.—Kentucky Carlsbad Springs Hotel Co. will erect 30-room annex, install elevator system, etc.; J. W. Glover, Lexington, Ky., interested.

Miss., Tupelo.—Frank Walton, Secy. Young Men's Business Club, is interested in erection of hotel on Spring St.; about 60 rooms; fireproof; brick; tile roof; cost \$40,000; other details not determined. Address Young Men's Business Club.

N. C., Wilmington.—Seashore Hotel, Wrightsville Beach, will expend several thousand dollars to improve building, to include addition to dining-room, repainting, additional toilets, beautiful grounds, etc.; latter work under supervision of Frank Mead, architect for Tidewater Power Co.

Okl., Tulsa.—Aaronson family and M. M. Travis are having plans prepared by Schumacher & Atkinson, Tulsa, for 5 residences; old Italian style; tile roofs, with overhanging eaves; entrance through gate lodge; central heating plant; plans also include dredging lake, installing drives and fountains, etc.; Hare & Hare, landscape architects, Kansas City, Mo.; construction under supervision of designing architects; total cost reported at \$500,000. Schumacher & Atkinson wire Manufacturers Record: "Houses in sketch form; working drawings finished in 2 months; Travis dwelling to cost \$100,000; Bedford stone, 2 stories; 4 others in group about \$50,000 each, stucco; these amounts exclusive of furniture; all usual equipment of high-class work."

S. C., Gaffney.—Gaffney Hotel Co., J. N. Lipscomb, Pres., is having plans prepared by Louis H. Asbury, Charlotte, N. C., for hotel; 40x110 ft.; 4 stories; brick, steel and ordinary construction; Barrett roof; electric passenger and freight elevators; 2 fronts of white pressed brick; fireproof; steam heat; electric lights; cost \$45,000. (Previously noted.)

Tex., Amarillo.—T. S. Mitchell has plans by Geo. Burnett Co., Waco, for hotel; 140x140 ft.; 150 rooms; concrete, face brick and terra cotta; metal partitions; electric fixtures; steam heat; electric elevator; cost about \$150,000.

Tex., Taylor.—T. W. Marse, Andy Zilker and Howard Bland receive bids until Mch. 14 for alterations and additions to 3-story and basement fireproof hotel; plans and specifications at office R. L. Coyle, Archt., Taylor, and Henry T. Phelps, Archt., 618 Gunther Bldg., San Antonio, Tex. (Lately noted.)

MISCELLANEOUS

Ga., Moultrie.—Clubhouse.—Moultrie Country Club will soon let contract to erect clubhouse; provide swimming pool and tennis court; cost \$10,000.

Md., Baltimore.—Studio.—Bachrach Studios has plans by Louis Levi, Munsey Bldg., Baltimore, to remodel building at 16 W. Lexington St.; brick and timber; wood floors; elec-

tric wiring; electric elevator; cost \$5000; bids opened March 9. Address architect.

Md., Laurel.—Clubhouse.—Farmers' Club of Laurel Dist. will erect clubhouse near Willis School, on Sandy Springs Rd.

N. C., Greensboro.—Fair.—Central Carolina Fair Assn., J. L. King, Pres., will expend \$7000 to \$10,000 to improve fair grounds.

Okl., Oklahoma City.—Salvation Army.—Salvation Army will erect building for meetings, gymnasium and officers' living-rooms; brick and concrete; 100x50 ft.; gravel or metal roof; basement floor cement; 1st and 2nd floors hardwood; heating not determined; electric wiring; cost \$25,000; date opening bids not decided; construction probably begins July 1. Address C. F. Robinson, Ens., 106 W. Reno St., Oklahoma City. (Lately noted.)

Okl., Spavinaw.—Clubhouse.—Spavinaw Hunting & Fishing Co. is having plans prepared by C. W. Dawson, Muskogee, Okla., for clubhouse.

Okl., Vinita.—Clubhouse.—Hill Crest Country Club will erect clubhouse; provide golf courses, etc.; E. W. Samuel, Pres.; R. P. Armstrong, Secy.

S. C., Columbia.—Orphanage.—Epworth Orphanage has plans by H. Z. Nabers, Columbia, for 2 dormitories; 2 stories; brick; 10 rooms; shingle roof; pine and tile floors; open grates; electric lights; cost \$5000 to \$6500; bids opened in 50 to 60 days. Address architect. (Lately noted.)

Tenn., Columbia.—Poultry-house.—Eleanor, Jno. W., and Bradley Frierson have plans by J. E. Alford, Columbia, for poultry-house; 20x120 ft.; brick; composition roof; cement floor; cost \$3000. (Lately noted.)

Tenn., Lenoir City.—Fair.—Lenoir City Fair Association will construct racetrack, grandstand and other buildings.

Tex., Dallas.—Clubhouse.—City Club to be organized by J. C. Duke, A. M. Matson, J. S. Kendall and others will lease 3 upper floors of Southland Life Insurance Co.'s building; also plans to erect \$200,000 addition to building; 75x100 ft.

Tex., Paris.—Clubhouse.—Paris Golf Club will erect clubhouse; cost \$5000 to \$6000.

Va., Richmond.—Shed.—Mrs. Lizzie T. Price will erect 2-story frame and stucco wood shed; cost \$3500.

W. Va., Huntington.—Clubhouse.—Ohio Valley Welfare Association will remodel building for clubhouse; install gymnasium and dormitory.

W. Va., Shepherdstown.—Clubhouse.—Mountain View Country Club will erect addition equal to size of present structure, to include apartments and dancing hall; H. E. Yessler, Archt., Hagerstown, Md.

RAILWAY STATIONS, SHEDS, ETC.

Fla., Dade City.—Seaboard Air Line Rwy., W. D. Faucette, Ch. Engr., Norfolk, Va., is reported considering erecting depot; brick.

Ga., Atlanta.—Southern Ry. System, B. Herman, Ch. Engr. M. W. & S. Lines East, Charlotte, N. C., will expend \$5000 to repair freight depot at Peters St.; also \$1500 to repair building at Bell and Decatur Sts. damaged by fire; day labor.

Ky., Maysville.—Chesapeake & Ohio R. R., F. I. Cabell, Ch. Engr., Richmond, Va., plans to erect freight and passenger depot.

Va., East Stone Gap.—Southern Ry. System, B. Herman, Ch. Engr. M. W. & S. Lines East, Charlotte, N. C., will rebuild depot noted damaged by fire.

SCHOOLS

Ark., Centerton.—Centerton School Dist. will erect school to replace structure previously noted burned at loss of \$8000. Address Dist. School Trustees.

Ark., Pine Bluff.—Pine Bluff Special School Dist. will issue bonds to erect high school. Address Dist. School Trustees.

D. C., Washington.—Dist. of Columbia has plans by Snowden Ashford, Room 104 Dist. Bldg., Washington, for school addition at Connecticut Ave., McKinley and Northampton Sts., N. W.; 3 wings; two 81x36 ft., 42 ft. high and one 95x48 ft., 32 ft. high; brick walls; fireproof floors; wood cornices; pebble dash; tin and slag roof; reinforced concrete floors; 4 vault lights in entries 4x6 ft.; cost \$50,000; plenum heating system, direct-indirect electric lighting, current from local company, \$15,000; bids opened about April 1. Address Secy. Board of Comms., 509 Dist. Bldg. (Lately noted.)

D. C., Washington.—Immaculate Conception Academy, 8th and Q Sts., will erect 3-story addition for dormitory and chapel; brick; tin roof.

Fla., Fort Ogden.—Fort Ogden Special Tax School Dist. No. 17 voted \$13,000 bonds to erect high school; P. G. Shaver, County Supt. of Public Instruction, Arcadia, Fla.

Fla., Jacksonville.—Dept. of Public Instruction of Duval County has plans by R. A. Benjamin, Bisbee Bldg., Jacksonville, for school at 5th and Hubbard Sts.; 102x220 ft.; semi-fireproof; brick walls; concrete floors; hollow tile partitions; steel roof trusses over auditorium; slab and beam floor construction; composition roof; heating and lighting not decided; cost \$80,000; date opening bids not decided. (Lately noted.)

Fla., Lansing.—Oak Hill Special Tax School Dist. voted \$5000 bonds to erect school; P. G. Shaver, County Supt. of Education, Arcadia, Fla.

Ga., Hopeful.—Hopeful School Dist. voted \$5500 bonds to erect school. Address County Supt. Public Instruction, Camilla, Ga. (Lately noted.)

Ga., Hinsonton.—Hinsonton School Dist. defeated \$4000 bonds to erect school. (Lately noted.)

Ga., Reynolds.—School Trustees will erect school building; 2 stories; 12 rooms and auditorium; steam heat; electric lights; seating capacity 1000; cost \$25,000.

Ga., Sale City.—Sale City School Dist. voted \$8000 school bonds. Address County Supt. Public Instruction, Camilla, Ga. (Lately noted.)

Ky., Waddy.—School Trustees will erect \$7000 brick building to replace burned structure.

La., Carencro.—Lafayette Parish School Board has plans by G. B. Knapp, Lafayette, La., for school; 80x150 ft.; brick; slate roof; wood floors; steam heat; cost \$31,000; bids opened April 15; construction begins May 10. Address L. J. Alleman, Lafayette, La. (Lately noted.)

La., Pineville.—Trustees Louisiana College selected Scott Yeager, Alexandria, La., to prepare plans for dormitory; cost \$40,000.

La., Starks.—Calcasieu Parish School Board, F. M. Hamilton, Supt., Lake Charles, La., has plans by A. H. Humphrey, Room 4, Levy Bldg., Lake Charles, for high school; 60.2x89.8 ft.; 2 stories; 1-story wing; wood construction; asphalt slate covered shingle roof; double wood floors with felt between; steam heat; 1700 ft. radiation; electric lights, probably combined with pneumatic water supply system to be installed; cost \$14,000; bids opened about Mch. 20. (Lately noted.)

Md., Catonsville.—Baltimore County School Board, Towson, Md., will erect school at Ten Hills, near Catonsville.

Md., College Park.—Maryland State College has plans by Flournoy & Flournoy, 1517 H St., Washington, D. C., for buildings and opens bids Mch. 12; main building, 200.8x206 ft.; 3½ stories and basement; brick, artificial stone and concrete; colonial type, with portico and white pillars in front; 1-story auditorium, 56x67 ft.; stock pavilion, creamery and meatroom in rear; cost about \$20,000; following contractors are estimating: Cogswell-Koether Co., 406 Park Ave.; B. F. Bennett Building Co., 123 S. Howard St.; H. D. Watts Co., Garrett Bldg.; David M. Andrew Co., Mt. Vernon Ave. and 26th St.; Henry Smith & Sons Co., German and Light Sts.; Cowan Building Co., 106 W. Madison St.; Singer-Pentz Co., Equitable Bldg.; Price Concrete Construction Co., Maryland Trust Bldg.; T. B. Stenfield & Co., 212 Clay St.; Edward Brady & Son, 1113 Cathedral St.; Morrow Bros., Fidelity Bldg., all of Baltimore; P. F. Gormley, 617 Union Trust Bldg.; Boyle-Robertson Construction Co., 1516 H St. N. W.; Arthur L. Smith, 1111 Woodward Bldg., all of Washington; Jas. Stewart Co., 30 Church St.; W. H. Fissell & Co., 113 Broadway; Norcross Bros. Co., 103 Park Ave., all of New York; Wm. O. Sparklin, Consult. Engr., Law Bldg., Baltimore. (Previously noted.)

Miss., Agricultural College.—W. H. Smith, Pres. Board of Trustees, Agricultural and Mechanical College, receives bids until March 24 to erect brick addition to dormitory building; separate bids for plumbing, heating and electric wiring; plans and specifications at office Mr. Smith, Agricultural College, and Xavier A. Kramer, Const. Engr. and Archt., Magnolia, Miss. (Lately noted.)

Miss., Jackson.—Xavier A. Kramer, Magnolia, Miss., is preparing plans for Mississippi Training School (for Juvenile Reform); approximately 75 buildings when completed; ultimate cost \$500,000; town will be asked to bid for location; 3000 acres required; capacity 2000 students.

Miss., Starkville.—State is having plans prepared by Xavier A. Kramer, Magnolia, Miss., for dormitory for A. & M. College;

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Washington, to erect lodge; 7 stories and basement; steel construction; terra-cotta front; tile and marble interior; fireproof; reinforced tile and concrete floors; steel frame and sashes; granite steps and base; mansard roof covered with tile; hardwood and parquetry floors in store portions; corridors, ceramic tile; side walls of Tennessee marble; 3 elevators, 2 passenger and 1 freight; 5 stores on first floor; 6th and 7th floors for lodge; cost \$200,000; W. S. Plager, Archt., 2015 Kearney St. N. E., Washington. (Lately noted.)

Fla., Miami.—Y. M. C. A. let contract to W. P. Richardson & Co., Jacksonville, to erect building; 4 stories and basement; 84 dormitory rooms; 2-story gymnasium, with track 10 ft. above floor; bowling alleys, swimming pool, etc., in basement; cost \$107,000; H. H. Munday, Archt., 236 12th St., Miami; Mr. Whitaker, Consult. Archt., Atlanta. (Previously noted.)

Ky., Shelbyville.—A. F. & A. M. have plans by and let contract to Gruber & Doss, Shelbyville, to erect addition to Old Mason's Home; 17 rooms; 50x70 ft.; brick and concrete; slate roof; wood floors; steam heat; cost \$10,000.

W. Va., Fairmont.—T. A. Deveney let contract to erect store, lodge and office building. (See Stores.)

BANK AND OFFICE

Ky., Madisonville.—Baker & Hickman let contract for store and office building. (See Stores.)

Ky., Madisonville.—Baker & Hickman let contract for store and office building. (See Stores.)

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

Ky., Pineville.—First State Bank let contract to A. J. Stair, Knoxville, to erect bank building; 35x70 ft.; cut stone and concrete; marbleoid floors; hot-water heat; electric lights; cost \$15,000; Manley & Young, Archts., Knoxville, Tenn., and Lexington, Ky. (Lately noted.)

Mo., St. Louis.—Newmarket Bank, Nat Ewing, Prest., will erect office building.

N. C., Asheville.—Paul Roebling let contract to erect lately-noted reinforced concrete store, office and garage building. (See Stores.)

Okla., Okmulgee.—Knight² of Columbus Building Assn. will erect office building.

Okla., Tulsa.—Mrs. R. M. Johnson will erect theater and office building; 2 stories.

Okla., Bixby.—First National Bank let contract to erect structure; brick; M. T. Hardin, Archt., Muskogee, Okla.

Tex., Dallas.—T. J. McMurray and C. T. Gettys will erect business and office building. (See Stores.)

W. Va., Fairmont.—T. A. Deveney let contract to erect store, office and lodge building. (See Stores.)

CHURCHES

Ga., Atlanta.—First Presbyterian Church, Dr. Spole Lyons, Pastor, has plans by W. T. Downing, Grant Bldg., Atlanta, for \$90,000 structure; English Gothic style; dull brown stone; Miles & Bradt, Contrs., Atlanta. (Lately noted.)

Okla., Bristow.—Methodist Episcopal Church South let contract to B. F. Curran, Billings, Mo., to erect previously noted building; about 55x65 ft.; brick; slate and composition roof; basement floor concrete; auditorium floor wood; heating not decided; gas and electric lights; cost complete, including furnishings, heating and lighting, \$18,000; R. H. Hunt, Archt., Chattanooga, Tenn. Address R. M. House, Secy. Building Com., Bristow. (See Machinery Wanted—Building Materials; Rolling Partitions; Seating; Pipe Organ; Piano; Carpets; Slate; Stone.)

Tex., Dallas.—Church of the Incarnation let contract to Hugo Reinold, Dallas, to erect parish house; hollow tile and brick veneer; fireproof; temporary roof over first story; concrete floors; cost \$11,000; H. M. Bernet, Archt., Dallas. (Previously noted.)

Tex., Dallas.—St. Andrew's Church, Rev. J. C. Black, rector, let contract to Ellis & Nottey, Dallas, to erect building; 31x42 ft.; frame; shingle roof; yellow pine floors; cost \$3500; J. L. Bothwell, Archt., Dallas.

Va., Staunton.—First Presbyterian Church let contract to M. B. Stoddard, Staunton, to erect Sunday-school building; A. Kelsey, Archt., Perry Bldg., Philadelphia, Pa. (Lately noted.)

CITY AND COUNTY

Okla., Durant.—Jail and Courthouse.—Bryant County Commrs. let contract to erect courthouse and jail. (See Courthouses.)

COURTHOUSES

Okla., Durant.—Bryant County Commrs. let contract to Manhattan Construction Co., Muskogee, Okla., to erect courthouse and jail; cost \$100,000; Jewell Hicks, Archt., Durant. (Lately noted.)

DWELLINGS

D. C., Washington.—Geo. W. Taylor has plans by Landvoight & Cook, 1410 H St. N. W., Washington, for 2 dwellings, 601-03 48th Place N. W.; cost \$3800; L. D. Hayes, Contr., 4901 Deane Ave. N. E., Washington.

Fla., St. Petersburg.—Walter W. Holmes, Waterbury, Conn., will erect residence on Beach Drive; constructed in shape of "H"; 2 entrances; 2 courts; sun parlor, bath for each bedroom, etc.; bouthouse for lunch; Frank E. Estes, Contr.

Fla., Tampa.—Mrs. Margaret W. Oszman let contract to erect \$5000 residence.

Ga., Augusta.—Mrs. Alice Hunt let contract to erect brick, frame and stucco residence; cost \$4500.

Ga., Atlanta.—Louis Regenstein let contract to W. P. Francis, Atlanta, to erect 2-story hollow tile stucco dwelling; cost \$13,850.

Md., Baltimore.—John J. Kirkness, 401 S. Broadway, let contract to H. Constantine, 677 W. Barre St., Baltimore, to erect 15 2½-story brick dwellings on E. 33d St. between Calvert St. and Guilford Ave.; 21x35 ft.; estimated cost \$50,000. (Lately noted.)

Md., Baltimore.—Guilford Building Co., 2806 St. Paul St., let contract to T. H. W. Abbott, same address, to erect number of

dwellings at University Parkway and Guilford Ave.; 24x38 ft.; brick; tile and slag roof; hardwood floors; steam heat; electric lights; cost about \$43,000; Stanislaus Russell, Archt., 2900 Clifton Ave., Baltimore. Address contractor. (Lately noted.)

Md., Cumberland.—Amos E. Lee, South Cumberland, let contract to Edw. J. Coffey, 23 Green St., Cumberland, to erect residence; 32x34 ft.; brick; slate roof; yellow pine floors; cost \$3500. (Lately noted.)

Md., Cumberland.—John I. Vandergrift has contract to erect 10 dwellings; frame and stucco, shingle and tile; composition roofing; wood floors; hot-air heat; electric lights; cost \$2000 each.

Md., Cumberland.—Anna L. and Rebecca Porter have plans by and let contract to John I. Vandergrift, Cumberland, to erect residence; 2 stories; brick and tile; 26x31 ft.; slate roof; hardwood and pine floors; hot-air heat; electric lights; cost \$3300.

Md., Mt. Washington.—W. Addison Baker will erect 2½-story dwelling at Hill Top Park on south side Ardmore Rd.; 27x36 ft.; frame; slate roof; wood floors; steam heat; electric and gas lights; cost \$7000; Oliver B. Wight, Archt., 1122 Munsey Bldg., Baltimore; Webb & White, Contrs., Title Bldg., Baltimore, may be addressed.

N. C., Asheville.—S. F. Chapman let contract to Carolina Wood Products Co., Asheville, to erect residence; cost \$17,500. (Lately noted.)

N. C., Greensboro.—E. Sternberger will erect lately-noted dwelling; 34x37 ft.; brick veneer; tiling inside; tile roof; inlaid hardwood floors; hot-water heat; electric and gas lights; cost \$20,000; bids opened in March or April; Harry Barton, Archt., Greensboro. Address owner. (See Machinery Wanted—Lighting Equipment; Building Material.)

Tex., Austin.—Paul W. Jeffrey, 1907 Rio Grande St., let contract to C. H. Youngate, 4404 Avenue A, Austin, to erect dwelling; 38x54 ft.; stucco; shingle roof; edge grain and ordinary flooring; electric lights; fireplace and flue heat; cost \$3250; Edwin C. Kreisle, Archt., 820 Scarbrough Bldg., Austin. (Lately noted.)

N. C., Winston-Salem.—V. T. Edmunds let contract to L. T. Long to erect bungalow.

Tex., Beaumont.—Thos. J. Baden has plans by Mauer, Knoblock & Simank and let contract to E. T. Vauchet, both of Beaumont, to erect \$6000 residence.

Tex., Yorktown.—Mrs. Jos. Kolodzey has plans by and let contract to C. B. Lutenebacher, Yorktown, to erect (labor only) \$9000 cement pressed-brick veneer residence; owner to furnish materials; cement brick pressed on ground. (See Machinery Wanted—Building Materials; Cement; Flooring; Shingles; Steel Ceiling.)

GOVERNMENT AND STATE

Ga., Barnesville.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., let contract at \$39,500 to Miles & Bradt Co., 800 Austell Bldg., Atlanta, to erect postoffice; 60x70 ft.; brick; concrete and wood joist construction; tar, gravel and tin roof; concrete and wood floors; steam heat; electric and gas lights. Address contractor. (Lately noted.)

Ky., Frankfort.—Penitentiary.—State let contract at \$38,000 to Chas. H. Smith, Bowling Green, Ky., for fireproof construction and ventilation work on penitentiary; Brinton B. Davis, Archt., Louisville. (Lately noted.)

Miss., McComb.—Postoffice.—Treasury Dept., Jas. A. Wetmore, Acting Supervising Archt., Washington, D. C., let contract to Geo. A. Shaul, Seneca, Kan., at \$40,353, to construct postoffice. (Lately noted.)

HOSPITALS, SANITARIUMS, ETC.

S. C., Columbia.—State will erect addition to State Tuberculosis Sanitarium; \$40,000 available; Richard Manning, Governor; Wilson & Sompayrac, Archts.

HOTELS

Tex., San Angelo.—W. C. Hedrick Construction Co., Dallas, Tex., general contractor to erect hotel for C. C. McBurnett, let following sub-contracts: Electric work, J. M. Johnson & Co.; glass, Federal Glass & Paint Co.; sheet metal, Dallas Heating & Ventilating Co.; cement, Trinity Portland Cement Co.; hollow clay tile, Acme Brick & Supply Co.; cement testing, Robt. W. Hunt & Co.; marble and tile, J. Desco & Son; face brick, Acme Brick & Supply Co.; artificial stone, Architectural Supply Co.; all of Dallas; lumber, Wm. Cameron & Co., San Angelo; steel reinforcing, Trussed Con-

crete Steel Co., Youngstown, Ohio; plastering, Smith & McCallin, Denver, Colo.; fireproof partitions, Gypsum Fireproofing Co., Chicago; plans by Geo. Burnett Co., 212-14 Cameron Bldg., Waco, Tex., call for building 90x105 ft.; reinforced concrete; Barrett roof; cost \$150,000; vacuum steam heat, \$20,000; electric lights, \$21,000. (Previously noted.)

MISCELLANEOUS

S. C., Greenwood.—Amusement.—Greenwood Cotton Mill let contract to erect bandstand, summer-house, skating rink, etc. (See Land Developments.)

SCHOOLS

Mo., Kansas City.—E. J. Sweeney let contract to Geo. M. Bliss Construction Co., 1206 Commerce Bldg., Kansas City, to erect addition to automobile school under construction at 24th and Wyandotte Sts.; 102x120 ft.; 10 stories; reinforced concrete, brick and terra-cotta; tar and gravel roof; concrete floors; Warren Webster vapor heat; Luxfer prism vault lights; Otis freight and passenger elevators; cost \$150,000; Keene & Simpson, architects, 400 Reliance Bldg., Kansas City. Address contractor. (Lately noted.)

N. C., Raeford.—Trustees, J. W. McLaughlin, Chrmn., let contract to G. W. Cox, Raeford, to erect school; 2 stories and basement; ordinary construction; brick; 105x135 ft.; 12 rooms; Barrett specification 5-ply built-up roof; wood floors; electric lights; terra-cotta trim; galvanized iron finish; warm-air heat (contract let to Moncrief Furnace Co., Atlanta, Ga.); auditorium to seat 600; cost \$28,000; H. E. Bonitz, Archt., Wilmington, N. C.; also let contracts for millwork, steel and roofing. Address contractor. (Lately noted.)

Okla., Bartlesville.—Board of Education let contract to M. E. Graybill, Bartlesville, to erect Junior High School; 70x120 ft.; reinforced concrete; gravel roof; concrete floors with maple and cement finish; cost \$75,000; J. H. Felt & Co., Archts., Kansas City, Mo. (Lately noted.)

S. C., Gaffney.—School Board let contract to V. I. Spurgeon and J. L. Mooney, Gaffney, to erect school building; cost about \$29,000.

Tenn., Ooltewah.—Southern Junior College, A. N. Atteberry, Mgr., let contract to erect \$40,000 school building.

Tex., Houston.—City let contract to A. Hess, Houston, to erect one or two 2-room units for Montrose School; 30x60 ft.; hollow tile; tar and gravel and clay-tile roof; wood floor on concrete; cost \$50,000 each; vacuum heating system, \$1585 to \$2300; Maurice J. Sullivan, Archt., Houston. (Lately noted.)

W. Va., Morgantown.—State Board of Control, Jas. S. Lakin, Prest., Charleston, W. Va., let contract to R. R. Kitchen Co., Wheeling, W. Va., to erect agricultural building at University of West Virginia; 85 ft. 9 in. by 188 ft.; 3 stories and basement; slate roof, including heating, plumbing and electrical work; ground floor, cement; first floor, reinforced concrete; second and third floors, wood joist construction; brick walls; terra-cotta and limestone trimmings; total bids of proposed buildings to be erected exceed appropriation; other buildings to be erected when sufficient funds are available; Paul A. Davis, 3d, Archt., 1713 Sansom St., Philadelphia. (Noted in Jan.)

STORES

Ark., Marked Tree.—A. B. Jones Co., Jonesboro, Ark., let contract to Henry Lesmeister, to erect brick business building; cost \$12,000.

Ark., Newport.—J. W. Grubbs let contract to erect brick store building.

Fla., Tarpon Springs.—H. M. Grammar has contract to erect cement business block; 24x40 ft.

Ga., Atlanta.—T. H. Jeffries let contract to Mackle Construction Co., Atlanta, to erect 2-story and basement reinforced concrete building at 169-71 Marietta St.; cost \$39,380; Deford Smith, Archt., Atlanta.

Ky., Carlisle.—Bluegrass Produce Co. let contract to enlarge building.

Ky., Madisonville.—Baker & Hickman let contract to People's Planing Mill, Madisonville, to erect 2-story store and office building. (Lately noted.)

Ky., Paducah.—Gus Lockwood, Paducah, has contract to remodel Sutherland Medicine Co. building according to plans by W. L. Brainerd, Paducah; to be occupied by American Cigar Co.

La., Lake Charles.—J. Musey let contract to J. Hamp, Lake Charles, to erect 2-story brick business building; cost about \$4000; construction begun.

Md., Baltimore.—Wm. J. Sauter, 1810 Eutaw Pl., let contract to Thos. L. Jones & Son, 410 W. Saratoga St., Baltimore, to erect brick; slag roof; wood joist floors; electric lights; cost \$7000; steam heat, \$400. Address contractor. (Lately noted.)

N. C., Asheville.—Paul Roebling let contract to S. I. Bean, Asheville, to erect building for garage to accommodate 100 machines, store at 126 N. Eutaw St.; 12.4½x109.2½ ft.; 8 stories and 84 offices; 222x160 to 184 ft.; 3 stories; reinforced concrete; composition roof; concrete floors; steam heat; electric lights; electric elevator; cost about \$300,000; W. J. East, Archt., Asheville, may be addressed. (Lately noted.)

N. C., Hendersonville.—J. M. Gudger, Asheville, N. C., let contract to erect 2-story brick building; 52x105 ft.; plate-glass front; cost \$30,000; to be occupied by H. Patterson.

N. C., Monroe.—Belk Bros. let contract to erect store building.

Okla., Cyril.—Camp & Cook let contract to J. C. Klein, Lawton, Okla., to erect brick business building. (Lately noted.)

Okla., Muskogee.—V. H. Sayer let contract to Henry Vogel, Muskogee, to erect store; 1 story; 50x70 ft.; brick and stone; tar and gravel roof; cement floors; cost \$4000; construction begins March 5; H. O. Valeur & Co., Archts., Muskogee. (Lately noted.)

S. C., Columbia.—Sol Loeb will erect 3 business buildings on old Estes home site; Butts Lumber Co., Contr.

S. C., Chester.—J. W. Gladden let contract to W. W. Blair to erect 2-story brick building; 5 stores on first floor; apartments above.

S. C., Chester.—John Frazer let contract to erect brick building to be occupied in part by Chester Chero-Cola Bottling Co.

Tenn., Memphis.—Alston Boyd let contract to Alexander Construction Co., Memphis, to erect mercantile building; 25x150 ft.; 4 stories and basement; reinforced concrete; gravel roof; cement and tile floors; cost \$50,000; heating, \$2500; electric passenger elevator, \$3500; Hanker & Cairns, Archts., 528 Scimitar Bldg., Memphis. (Previously noted.)

Tex., Brenham.—J. Schleider's Sons Co. let contract to A. Boring, Houston, to erect lately-noted mercantile building and warehouse; former, 80x100 ft.; warehouse, 220x50 ft.; brick and concrete; Taxaco 10-year roofing; 1st floor, concrete; 2d, mill construction; light from local plant; Otis elevator; cost \$43,000; M. M. Ginn, Archt., Brenham. (See Machinery Wanted—Electric Fixtures; Office Fixtures.)

Tex., Paris.—R. F. Scott let contract to erect 2-story brick and stone building; 7½-ft. tower with dial clock.

Tex., Goliad.—Joseph Werden let contract to Joseph Gray, Goliad, to erect store building; interlocking tile construction; cost \$5000; Jules Lefland, Archt., Victoria, Tex.

Tex., Victoria.—Victoria Hardware Co. let contract to Fred Urban to supervise construction of store building by owner's force; 2 stories and basement; 83.3x70.3 ft.; brick tile and reinforced concrete; semi-fireproof; tar and gravel roof; Luxfer prism vault lights; electric freight elevator; cost \$30,000; Prager & Dixon, Archts., Victoria. (Lately noted.)

Va., Portsmouth.—Vaughan Construction Co., Shawsville, Va., has contract to erect building for G. Weinberg, Inc.; cost \$14,000. (Incorrectly reported in Jan. as having contract to erect this building for Mrs. G. Weinberg.)

W. Va., Fairmont.—T. A. Deveney let contract to C. D. Keyser, Bellaire, O., to erect store, lodge and office building; 6 stories; 60x100 ft.; composite construction; built-up composition roof; wood floors; cement sidewalks; buff brick; steel superstructure; cost \$100,000; other contracts include: Steel, Moss Iron Works, Wheeling; electric wiring, R. T. Foley, Fairmont; plumbing, Alex. Zeck, Fairmont; will use American Valve & Tank Co.'s sanitary fixtures; John Burchinal, Archt., Fairmont. Address Contr.

WAREHOUSES

Md., Baltimore.—Tungsten Products Co. has plans by Otto G. Simonson, Maryland Casualty Tower Bldg., and let contract to R. B. Mason, 308 W. Madison St., both of Baltimore, to erect warehouse in Highlandtown; 1 story; brick or reinforced concrete.

Tex., Brenham.—J. Schleider's Sons Co. let contract to erect warehouse. (See Stores.)

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

"WANTS"

Air Compressor.—Twin City Boiler Works, Bristol, Va.—Air compressors; 24 to 35-in. throat; 8x8-in.; belt-driven.

Air Hoists.—C. C. Penny, Birmingham, Ala.—One class H 10-in. by 5-ft., one class A 12-in. by 6-ft. and two class A 8-in. by 6-ft. Curtis air hoists.

Bank Fixtures.—Bem Price, 518-19 Empire Bldg., Birmingham, Ala.—Bids on bank fixtures for building at Athens, Ala.; plans ready about March 8.

Barrel Machinery.—A. De Malander, 220 Broadway, New York.—Catalogues and prices on barrel-making machinery.—See Shears, Brakes, etc.

Barrel Machinery.—A. J. Robinson, Centerville, Tenn.—Prices on tight barrel machinery.

Beds (Disappearing).—M. S. Clark, Miami, Fla.—Correspondence with manufacturers of disappearing beds (such as used in California apartments); send data, catalogues and prices.

Boat (Gasoline).—John G. Duncan Co., 36 W. Jackson Ave., Knoxville, Tenn.—Dealer's price on medium fast speed 20-passenger second-hand gasoline boat; for river traffic near Nashville and mouth of Cumberland River.

Boiler.—See Engine and Boiler.—A. J. Robinson.

Boiler (Return Tubular).—Box 41, Phillipsburg, N. J.—Prices on 150 to 200 H. P. horizontal return tubular boiler, 110 or more lbs. steam; second-hand.

Boring Machine.—R. D. Grier & Sons Co., Salisbury, Md.—Prices on machine for boring automobile cylinders.

Box Machinery.—Box 172, Moultrie, Ga.—Second-hand latest improved box machinery for making sawn wooden boxes.

Boxes (Paper).—Geo. Giles & Co., Ocala, Fla.—Correspondence with paper box manufacturers; in Baltimore preferred.

Bridge Construction.—Knox County Commissioners, Barbourville, Ky.—Bids until Mch. 14 to construct steel bridge across Cumberland River; superstructure and substructure to be let separately; also bids until Mch. 14 to construct approach of Big Richland Rd. to Little Richland Rd.; engineer to obtain and report estimates of work and cost.

Bridge Construction.—Montgomery County Commrs., Christiansburg, Va.—Bids until Mch. 20 to construct steel bridge 63 ft. long over Mill Creek; plans and specifications on file with County Clerk and with State Highway Commission, G. P. Coleman, State Highway Commr., Richmond, Va.; further information from Mr. Coleman.

Bridges (Steel).—Pulaski County Fiscal Court, Somerset, Ky.—Bids until Mch. 27 to construct 2 steel bridges across Pitman Creek; bridge on Monticello Rd., one 100-ft. steel span and two 80-ft. steel spans, requiring 158,200 lbs. steel, 61,320 lbs. reinforced steel; also concrete, handstone and piling; bridge on Mt. Vernon Rd., 80-ft. steel span, 46,750 lbs. steel, 4656 lbs. reinforced steel; also concrete and handstone; plans on file with Commr. Public Roads, Frankfort, Ky., and with W. C. Cundiff, Rd. Engr., Somerset, Ky.; C. M. Langdon, Clerk Pulaski County Court.

Building Material.—E. Sternberger, Greensboro, N. C.—Prices on building materials for \$20,000 residence.

Building Materials.—Mrs. Jos. Kolodzey, Yorktown, Tex.—In market for Portland cement, hardwood floors, wood carpet, parquetry, galvanized shingles, steel ceiling, etc., for \$8000 residence.

Building Materials.—R. M. House, Secy. Bldg. Com., M. E. Church South, Bristow, Okla.—Prices (net cash) with advertisements and descriptive matter of sliding and rolling partitions, pews, pipe organ, piano, carpets, windows, roofing slate, plain Bedford and Carthage stone for \$18,000 church building; bidders to specify sizes, etc.

Candy Machinery.—Beare Bros. Ice &

Coal Co., Jackson, Tenn.—Prices on candy-making machinery.

Canning Machinery.—L. L. Legters, Bishopville, S. C.—Prices on canning equipment.

Canning Machinery.—White Hardware Co., Uniontown, Ala.—Addresses of manufacturers of canning outfits.

Cars.—See Foundry and Machine Shop Equipment.—Beaumont Iron Works Co.

Cars (Dryer).—Henry Potts & Co., 650 Real Estate Trust Bldg., Philadelphia, Pa.—Prices on several dryer cars of 3-deck type, 30 or 36-in. gauge, for use by brick manufacturers.

Cars (Dump).—Pennsylvania Equipment Co., Philadelphia, Pa.—Prices on 10 to 20 second-hand 12-yd. standard gauge Western hand dump cars.

Carpets.—See Building Materials.—R. M. House.

Cars (Steel, Dump).—Roy C. Wayne Supply Co., 318 W. Main St., Louisville, Ky.—Ten 1½ or 2-yd. 2-way steel pump cars, 24 to 36-in. gauge; larger size car preferred.

Cement.—See Building Materials.—Mrs. Jos. Kolodzey.

Chuck.—C. E. Thompson, 1923 Powell Ave., Birmingham, Ala.—20 to 28-in. independent four-jaw chuck; good second-hand.

Crane (Traveling).—See Foundry and Machine Shop Equipment.—Beaumont Iron Works Co.

Crane (Locomotive).—Locrane, care Manufacturers Record, Baltimore, Md.—Locomotive crane, 15 to 25 tons; describe, give price and state how soon can ship.

Cranes (Traveling).—Easton Machinery Co., Drake Bldg., Easton, Pa.—Two electric traveling cranes; different spans.

Crossties.—Baltimore (Md.) Board of Awards, City Hall.—Bids until Mch. 14 to furnish 2500 creosoted yellow-pine crossties required in construction of Municipal Belt R. R., connecting with end of existing track at Key Highway and Light St. to point on Allicanna, east of President St.; specifications obtainable from R. M. Cooksey, Highway Engr.

Crushers (Roll; Jaw).—A. M. C., care of Manufacturers Record, Baltimore, Md.—Roll crushers, Sturtevant preferred; also jaw crushers.

Crusher.—General Utilities Co., 714 Paul-Gale-Greenwood Bldg., Norfolk, Va.—Used crusher for granite paving blocks.

Decoration (Interior).—Thurman & Boone Co., Roanoke, Va.—Correspondence with decorators on interior hotel work.

Drainage System.—Sanitary and Drainage Com., Room 401, Peoples Bldg., Charleston, S. C.—Bids until March 14 to lengthen under-drains and erect head walls on main highway in St. Andrew's Parish, 3 or 4 mi. from Charleston; information from Com.

Dredge.—John P. Jilbert, Room 1682, No. 50 Church St., New York.—½ to 1-yd. steam-operated dredge; for use in North Carolina.

Dredging.—Baltimore (Md.) Board of Awards, City Hall.—Bids until Mch. 14 for dredging in harbor; specifications and plans from Harbor Board, H. K. McCay, Harbor Engr., Broadway Pier.

Dredging Machinery, etc.—W. C. Smith, A. C. L. R. R., Hallsboro, N. C.—Addresses of manufacturers of "machinery for grinding marl and for drainage on large scale; combining facilities for taking marl from bottom of broad canals 30 to 40 ft. wide."

Electric Fixtures.—J. Schleider's Sons Co., Brenham, Tex.—Prices on electric fixtures for \$13,000 store and warehouse.

Electric-light System.—See Water-works and Electric Lights.—City of Murray, Ky.

Electrical Equipment.—Union Central Light & Power Co., W. A. Bass, Prest., Hubbard, Tex.—First-class second-hand marble or stone switchboards equipped with 2200-volt, 60-cycle, 3-phase electrical registering devices, Garton Daniels lightning arresters, open station type, 2500 volt transformers, etc.

Electrical Machinery.—See Hydro-electric Plant.—B. & A. Mining Co.

Electrical Supplies (Postal Service), etc.—Postoffice Dept., Office Purchasing Agent, Washington, D. C.—Bids until Mch. 23 to furnish typewriters and supplies; duplicating device; rubber supplies; computing, baling, addressing, numbering, opening, adding, check-writing and perforating machines; time recorders; scales; copying presses; trucks; pushcarts; twine and cordage; electrical supplies (motors, carbons, fuses); oils and chemicals, etc.; for fiscal service July 1, 1917, to June 30, 1918, etc.; blanks, etc., on application to Purchasing Agent.

Engine and Boiler.—A. J. Robinson, Centerville, Tenn.—Prices on boiler and engine on wheels; prefer 35 or 40 H. P. high-pressure second-hand boiler if in good repair.

Engines (Gas), etc.—School for Chauffeurs and Mechanics, Detachment Q. M. C., Fort Sam Houston, Tex.—Data and catalogues on gas engines and accessories.

Engine (Hoisting).—Pennsylvania Equipment Co., 1438 S. Penn Sq., Philadelphia, Pa.—Second-hand hoisting engine; to be electrically driven by 2 G. E. 90 H. P. 250-volt D. C. 51-form F motors; single hoisting drum, 7-ft. diam., grooved for 35 turns of 1-in. rope; hoisting depth 1500 ft.; hoisting speed 800 ft. per min.; maximum load, including rope weight, 9000 lbs.; post brake of sufficient capacity to hold specified load; bearings to be adjustable in all directions to allow for proper maintenance of pitch distance between drum shaft and counter-shaft; hoist must sectionalize to go into main tunnel 8x8 ft.

Flooring.—See Building Materials.—Mrs. Jos. Kolodzey.

Foundry and Machine Shop Equipment.—Beaumont Iron Works Co., Beaumont, Tex.—Prices on following equipment: 6-ton electric traveling crane, 40-ft. span; steel plant 70x130, main bay 40 ft., side floor 30 ft.; sand-grinding and sand-mixing machines, sand-blasting room, acetylene gas welding and cutting equipment, foundry saw, industrial tracks, cars, etc.

Generator (Electric).—Piedmont Electric Co., Electrical Bldg., Asheville, N. C.—100 K. W. 250-volt direct-current belt-driven generator with switchboard; immediate delivery.

Generator (Electric).—G. S. Peck, 1923 Powell Ave., Birmingham, Ala.—500 to 700 K. W. 250-volt direct current belted generator; second-hand.

Grinding (Marl) Machinery.—See Dredging Machinery, etc.

Heater.—Box 41, Phillipsburg, N. J.—Prices on 250 or 200 H. P. heater with steel tubes; second-hand.

Heaters (Water).—White Hardware Co., Uniontown, Ala.—Addresses of manufacturers of heaters suitable for heating water for dairy barns.

Heating and Plumbing.—Duval County Board of Public Instruction, F. A. Hathaway, Supt., Jacksonville, Fla.—Bids until Mch. 31 for heating and plumbing school building at Charles, Lemon and Gilmore Sts.; plans obtainable from Rutledge Holmes, Archt., Jacksonville, for \$10.

Heating.—Rev. J. D. Wallace, Georgetown, Ky.—Prices on furnace for \$5000 Sunday-school building.

Hoisting Machinery.—B. & A. Mining Co., Okmulgee, Okla.—Skip for hoisting ore.

Heating Plant.—Rockingham County Commrs., Wentworth, N. C.—Bids for installing heating plant in courthouse; communicate with J. P. McMichael, C. B. C. Wentworth.

Hose.—See Water-works (Fire Protection).—Dargan Wagoner Co.

Hydro-electric Equipment.—B. & A. Mining Co., Okmulgee, Okla.—Machinery for hydro-electric plant construction and equipment.

Ice-cream Machinery.—Beare Bros. Ice & Coal Co., Jackson, Tenn.—Prices on ice-cream machinery.

Knitting Machinery.—E. H. Emory Co., East Durham, N. C.—Prices on knitting machinery for hosiery.

Lace Manufacturing.—H. M. Willson, Niota, Tenn.—Data on lace-making, including cost of plant, profits, etc., and prices on machinery.

Lamps.—See Sawmills, etc.—Allan Cameron.

Lathe (Machine).—The Wheeler Co., Railroad, Pa.—Machine lathe, 12 or 13-in. swing, with compound rest; hollow spindle and all gears; good condition.

Laundry Machinery.—A. C. Childs, H. & I. School, Fort Valley, Ga.—Prices on laundry machinery.

Lighting.—Rev. J. D. Wallace, Georgetown, Ky.—Prices on electric lights for \$5000 Sunday-school building.

Lighting Equipment.—E. Sternberger, Greensboro, N. C.—Prices on electric and gas equipment for \$20,000 residence.

Lumber.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on white oak, North Carolina pine, 200 hackmatack knees, 100 white oak piles, schedule 797, and 200 North Carolina or Virginia pine creosoted piles, schedule 796, delivery Norfolk; yellow pine, schedule 797, delivery Brooklyn; 20,000 ft. airplane spruce, schedule 797, delivery Pensacola.

Lumber (Hardwood Scraps).—Howe Chain Co., Muskegon, Mich.—Hardwood scraps or seconds—beech, maple, hickory or birch; in car lots, finished to drawings furnished on request; boards 1½x8x45 in., finished and ends beveled; boards 1½x8x30 in., finished and ends beveled; boards 1½x20x36 in., finished, made up of 2 or 3 pieces lengthwise.

Machinery, etc.—Ramon Sanchez Diaz, Bilbao, Spain.—To correspond with exporters of: Sheet iron, plain or galvanized; steel for tools and other purposes; machinery for working iron and plumbago.

Metals.—Navy Dept., Bureau Supplies and Accounts, Washington, D. C.—Bids on naval bar brass, 12,100 lbs. bar model metal, schedule 779; carbon forged steel and machinery steel, schedule 780; all delivery Washington; 18,240 lbs. sheet lead, schedule 800, delivery Mare Island; 128,320 lbs. sheet lead, schedule 791, delivery Norfolk; 47,720 lbs. black medium plate hull steel, schedule 781, delivery f. o. b. works.

Metals (Lead, Copper and Steel).—Frank H. Gustafson, Box 491, Knoxville, Tenn.—Data and prices on lead, copper and steel for art-glass manufacture.

Mills (Buhr).—A. M. C., care of Manufacturers Record, Baltimore, Md.—Complete 42-in. to 48-in. buhr mills.

Milling Machine.—Gibbes Machinery Co., Wheat and Assembly Sts., Columbia, S. C.—Second-hand small plain milling machine, No. 1 or 1½, first-class order; describe and name price and shipment point.

Milling Machine.—The Wheeler Co., Railroad, Pa.—Second-hand milling machine, with vice and dividing head; Burke, Garvin or other good make.

Motors (Electric).—Chester Machine & Lumber Co., Chester, S. C.—New or second-hand motors; one A. C., 30 H. P., and two 15 H. P., A. C., 60-cycle, 3-phase, 220 volts; also double-end tenoner and double-head sash sticker.

Motors (Electric), etc.—L. H. Gilmer Co., Tacony, Philadelphia, Pa.—Prices on following equipment for loom building; four 25 H. P. alternative motors, 2-phase, 2-cycle, 220-volt, about 1800 R. P. M.; about 500 ft. 2 3-16 shafting; large quantity hangers and pulleys.

Motor (Electric).—Norton Construction Co., Norton, Va.—20 H. P., A. C. motor, 800 to 1200 R. speed.

Office Fixtures.—J. Schleider's Sons Co., Brenham, Tex.—Prices on office fixtures.

Paper (Wall).—Colleton Mercantile & Mfg. Co., Ritter, S. C.—Wholesale prices on wallpaper; view to representation.

Paving.—City of St. Louis, Mo., Room 315, New City Hall.—Bids until Mch. 16 to improve sections of Union and Genevieve Aves.; plans, specifications and further information from Prest. Board of Public Service, Room 325, New City Hall.

Partitions.—Rev. J. D. Wallace, Georgetown, Ky.—Prices on rolling or sliding partitions for \$5000 Sunday-school building.

Paving Materials.—J. A. Smallwood, Russellville, Ark.—Correspondence with firms handling paving material.

Paving Blocks.—Port Commrs., J. C. O'Dell, Gen. Mgr., 407 Realty Bldg., Jacksonville, Fla.—Bids until Mch. 24 to furnish 50,000 to 125,000 No. 1 vitrified paving blocks; bidders to submit 6 samples of paving blocks and quote prices per 1000 Municipal Docks and Terminals, Jacksonville; specifications and other information furnished by Mr. O'Dell.

Paving.—Baltimore (Md.) Board of Awards, City Hall.—Bids until Mch. 14 to grade, curb and pave Longwood, Presbury, Ashburton, Baker and other streets; 35,000 sq. yds. sheet asphalt paving, 20,000 lin. ft. armored concrete curb and circles, 25,000 cu. yds. grading; contract No. 151; specifications obtainable from Commrs. for Opening Streets, John H. Robinette, Prest., City Hall.

Pipe and Tubing, etc.—Navy Dept., Bureau Supplies and Accounts, Washington,

D. C.—Bids on galvanized black pipe fittings, lining lead pipe and 10,500 lbs. lead pipe, schedule 793; 5000 ft. cast-iron soil pipe and 50,000 lbs. cast-iron water pipe, schedule 783, delivery Norfolk; black steel pipe, schedule 793, delivery Brooklyn, Norfolk; 8100 ft. terra-cotta pipe-bell and spigot joints, schedule 783, delivery Portsmouth; 200 seamless steel boiler tubes, schedule 784, delivery Philadelphia.

Pipe, Millwork, Fire-brick, etc.—Panama Canal, Earl I. Brown, Gen. Purchasing Officer, Washington, D. C.—Bids until Mch. 22 on reinforcing bars, cast-iron pipe, envelopes, bond paper, carbon paper, graphite, tallow, putty, muriatic acid, castor, lard and linseed oils, turpentine, red lead, white zinc, varnish, shellac, paints, door and window hardware, millwork, fire-brick, etc.; blanks, etc., relating to this circular (No. 1129) obtainable from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from United States Engr. offices in principal cities throughout United States.

Pipe Organ.—See Building Materials.—R. M. House.

Piano.—See Building Materials.—R. M. House.

machine of about 12½ tons capacity, and piping for 2 coolers 19½x27½, 1 cooler 17½x22½ and 1 freezer 12½x15½; expect to buy within next 10 days.

Road Construction.—James County Highway Commission, T. J. Davis, Chmn., Ooltewah, Tenn.—Bids until Mch. 22 to grade, macadamize and chert roads in 5 districts; plans and specifications on file with W. I. Smith, Engr.

Road Construction.—Jackson County Commrs., Edna, Tex.—Bids until Mch. 12 to construct 11.2 mi. of road, 45,400 cu. yds.; 8.6 mi. of outlets, 138,500 cu. yds.; 2 mi. hard surfacing and 5 mi. of fencing; plans and specifications on file with W. W. McCrory, County Judge, Edna; W. R. Fuquhar, County Commr., Lolita, Tex.; Ralph C. Young, Co-operative Assn., Francitas, Tex.; G. A. Bracher, Engr., 2300 East Ave., Austin.

Road Construction.—Fayette County Court, R. J. Stegall, Clerk, Fayetteville, W. Va.—Bids until April 2 to grade and drain 2.5 mi. Giles, Fayette and Kanawha turnpike from Beckwith to Kanawha Dist. line; plans, profiles, etc., on file office of J. K. McGrath, Dist. Road Engr., Mount Hope, W. Va., and specifications, etc., obtainable from him on application for \$5 per

Co., Drake Bldg., Easton, Pa.—Prices on ½, ¾ and 1 steel wire rope, long lengths.

Sawmills, etc.—Allan Cameron, P. O. Box 1018, 188 Cashel St., Christchurch, New Zealand.—Small portable sawmills, about 2000 to 3000 ft. capacity for 10 hours; engines used being 6 to 8 H. P.; tail-light for motorcycles and red reflector for bicycles; light to be plain lamp throwing plain light on number, which is on plate about 2x8 in.; want price to be around 75 cents to \$1 delivered; reflector to be 1½ in. minimum size and to cost not over 25 cents delivered; prices on twine for wrapping goods in shops and for white and colored cotton duck cloth.

Seating.—Rev. J. D. Wallace, Georgetown, Ky.—Prices of folding chairs for \$5000 Sunday-school building.

Shafting, Hangers and Pulleys.—See Motors (Electric), etc.—L. H. Gilmer Co.

Seating.—See Building Materials.—R. M. House.

Shears, Brakes, etc.—A. De Malander, 220 Broadway, New York.—Catalogs and prices on bending brakes, metal shears, plate straighteners, machinery for barrel and wheel making, and stump pullers.

Shingles.—See Building Materials.—Mrs. Jos. Kolodzey.

Shovel (Stripping).—Southwestern Machinery Co., Fort Smith, Ark.—Price on stripping shovel, equipped with 2 or 3-yd. dipper.

Slate.—See Building Materials.—R. M. House.

Steel Ceiling.—See Building Materials.—Mrs. Jos. Kolodzey.

Steel.—See Machinery, etc.—Ramon Sanchez Diaz.

Steel Plates, Malleable Iron Castings and Miscellaneous.—Panama Canal, Earl I. Brown, Gen. Purchasing Officer, Washington, D. C.—Bids to furnish galvanized steel, steel plates, malleable iron castings, drawbar springs, driving-wheel centers, ferro-titanium, wire, grommets, hammers, axes, saw blades, files, twist drills, dies, gear cutters, ratchet braces, door and window hardware, belt-driven sander, street-lighting units, valves, watt-hour meters, ice-cream freezers, rubber belting, hose, cotton waste, roofing paper, calcium chloride, millwork, etc.; blanks, etc., relating to this circular (No. 1126) obtainable from this office or offices of assistant purchasing agents, 24 State St., New York; 614 Whitney-Central Bldg., New Orleans, and Fort Mason, San Francisco; also from United States Engr. offices in principal cities throughout United States.

Stone.—See Building Materials.—R. M. House.

Straws (Soda Water).—Wilson Produce Co., Corsicana, Tex.—Correspondence with manufacturers of soda water straws.

Structural Steel.—Bureau of Standards, Washington, D. C.—Bids until March 14

for furnishing, delivering and erecting about 49,000 lbs. structural steel, consisting of roof trusses, columns, framing, bracing, windows and doors; also about 13,000 lbs. corrugated steel roofing and side covering; plans, specifications, etc., upon application.

Stump-pullers.—A. De Malander, 220 Broadway, New York.—Catalogues and prices on stump-pullers.—See Shears, Brakes, etc.

Tanks.—Easton Machinery Co., Drake Bldg., Easton, Pa.—Two or three round closed tanks, 8x8 ft. or 9 ft.; state thickness and give price on cars.

Tanks.—Box 41, Phillipsburg, N. J.—Prices on 2 second-hand round tanks, 1500 gals. capacity; state thickness.

Tile (Building).—J. M. Gates, Contr. and Builder, Stewart Bldg. (or Box 975), Hopewell, Va.—Addresses of manufacturers or handlers of building tile.

Tires (Buggy, Steel).—D. F. Dunlop, Axton, Va.—Prices on steel buggy tires.

Tracks (Industrial).—See Foundry and Machine Shop Equipment.—Beaumont Iron Works Co.

Water-power Machinery.—See Hydro-electric Plant.—B. & A. Mining Co.

Water-works (Fire Protection).—Dargan-Wagoner Co., Pamlico, S. C.—Prices on 2½-in. hose, hydrants, 6-in. water main, 15,000-gal. tank; also 10,000-gal. tank, in both wood and metal, together with tower.

Water-works and Electric Lights.—City of Murray, Ky., Henry E. Holton, Mayor.—Bids until Mch. 29 to furnish materials, etc., and construct water-works improvements and electric-lighting system; water-works includes oil engines, pumps, well-working equipment and pumphouse; electric-light system includes furnishing alternators, switchboard, street-lighting equipment, wire, poles and line material; plans and specifications at office of Mayor, and specifications obtainable on application to Engr. Xavier A. Kramer, Magnolia, Miss.

Welding and Cutting Apparatus (Acetylene Gas).—See Foundry and Machine Shop Equipment.—Beaumont Iron Works Co.

Wheel (Fly).—"Flywheel," care Manufacturers Record, Baltimore.—Second-hand flywheel, 16-in. diam., 30-in. face, 13-in. bore.

Wheel Machinery.—A. De Malander, 220 Broadway, New York.—Catalogs and prices on wheel-making machinery.—See Shears, Brakes, etc.

Windmills.—C. N. Sandrock, Fayetteville, N. C.—Addresses of windmill manufacturers.

Woodworking (Handle) Machinery.—W. S. Allen, 1325 Jefferson County Bldg., Birmingham, Ala.—Data and prices on machinery for making pick and hammer handles.

Woodworking (Tenoner and Sash Stick-er) Machinery.—See Motors (Electric), etc. Chester Machine & Lumber Co.

FOR THE BENEFIT OF

ENGINEERS ARCHITECTS MACHINERY DEALERS
CONTRACTORS BANKERS MANUFACTURERS and OTHERS

Who find it profitable to follow up daily the industrial, commercial, railroad and financial development of the South and Southwest as published in this Construction Department,

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is issued every business day in the year

The construction news as published in the Daily Bulletin is invaluable to all business people who want to keep in daily touch with the organization of business enterprises of all kinds throughout the whole South. Unlimited possibilities for the creation of business, for securing contract work, for the sale of machinery and supplies of all kinds for bond buyers and others, are to be found through a close following up of the news in the Daily Bulletin.

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The Daily Bulletin is an exceptionally desirable advertising medium.

ADDRESS: MANUFACTURERS RECORD, BALTIMORE, MD.

Plate-straightening Machinery.—See Shears, Brakes, etc.—A. De Malander.

Plumbing Equipment.—Rev. J. D. Wallace, Georgetown, Ky.—Prices on commodes for water closets for \$5000 Sunday-school building.

Plumbing Fixtures.—H. W. Bryan, Rowland Court, St. Petersburg, Fla.—Prices on plumbing fixtures for \$12,000 apartment-house.

Pump (Belt-driven).—Chas. T. Lehman, Birmingham, Ala.—500 to 600 G. P. M. belt-driven power pump against 50-ft. head.

Pumping Station.—City of De Ridder, La., C. C. Davis, Mayor.—Bids Mch. 14 for constructing water-works pumping station and furnishing equipment, etc., in connection with plan for building 1,000,000-gal. water-works; equipment to include oil engines, pumps, pumphouse, reservoir, deep wells, etc.; plans and specifications at office of Mayor; specifications upon application to Xavier A. Kramer, Engr., Magnolia, Miss. (Lately noted.)

Punch and Shear.—Twin City Boiler Works, Bristol, Va.—Good second-hand power punch and shear.

Radiators.—H. W. Bryan, Rowland Court, St. Petersburg, Fla.—Prices on gas-steam radiators for \$12,000 apartment-house.

Refrigerating Machinery.—Columbia Produce Co., Columbia, Tenn.—Refrigerating

set each section; plans and specifications may be seen also at County Clerk's office.

Road Construction.—Hickman County Highway Commission, T. H. Erwin, Secy., Centerville, Tenn.—Bids until Mch. 30 to grade about 40 mi. road, requiring 220,000 cu. yds. excavation and necessary drainage structures; plans and specifications on file at office T. C. McEwen, County Engr., Centerville, after Mch. 15.

Roll.—C. H. Turner, Statesville, N. C.—Good second-hand double back-gear slip forming roll with lifting device for upper roll and iron legs for hand or power drive; roll to be 3½x42 or 4x42.

Rolling Partitions.—See Building Materials.—R. M. House.

Rolling Partitions (Wood).—R. W. Huie, Jr., care Callaway & Huie, Arkadelphia, Ark.—Data and prices on wood roller curtains, suitable for partitions between church main auditorium and Sunday-school room.

Roofing.—A. A. Kauzor, 113-A W. 3d St., Frederick, Md.—Prices on tile roofing for \$5000 residence.

Roofing and Ceiling.—J. E. Tucker, Sunset, Tex.—Prices on roofing and ceiling, delivered Sunset. (Is erecting 28x30-ft. garage.)

Rope (Steel Wire).—Easton Machinery

RAILROAD CONSTRUCTION

RAILWAYS

Fla., Leesburg.—Seaboard Air Line Railway officers have investigated various places in this (Lake) county and are reported contemplating construction of an extension. W. D. Faucette, Norfolk, Va., is Chief Engr.

Fla., Pensacola.—Pensacola, Mobile & New Orleans Railroad Co. is reported to have transferred its property to the Gulf Coast Terminal Co., including the line now under construction to Mobile. Elwood McLaughlin is Pres.

Ga., Atlanta.—The Federal Construction Co., it is announced, will again take up its plan for the construction of an electric railway from Atlanta to Canton, Ga., about 40 mi. Napier, Wright & Wood of Atlanta, are attorneys.

Ga., Atlanta.—Atlanta & West Point R. R. has awarded contract to the Brooks-Callaway Company of Atlanta to build second track from College Park to Palmetto, Ga., 20 mi.

Ga., Tignall.—Construction of an extension of the Elberton & Eastern R. R. from Tignall to Lincolnton, Ga., about 17 mi., is again under consideration. J. S. Crews, Elberton, Ga., is Gen. Mgr. and Treas.

Ky., Whitesburg.—Louisville & Nashville Railroad is reported planning building of yards at the mouth of Colly Creek, 3 mi. from Whitesburg; and is also contemplating double tracking from Whitesburg to the coal

fields, 16 mi. H. C. Williams, Louisville, Ky., is Chief Engr. of Construction.

Ky., Whitesburg.—Louisville & Nashville R. R. Co. contemplates building branch from Kona up Kentucky River Valley to new coal tracts, 3 mi. H. C. Williams, Louisville, Ky., is Ch. Engr. of Constr.

La., New Orleans.—Louisville & Nashville Railroad, according to a local report, contemplates spending about \$4,000,000 to strengthen its main line between New Orleans and Pascagoula, Miss., raising the tracks from five to twelve feet above the highest flood watermark, work to begin this summer. Surveys now being made. H. C. Williams, Louisville, Ky., is Ch. Engr. of Constr.

Miss., Meridian.—Southern Ry. Co. says it has no immediate plans to build second track on the New Orleans & Northeastern R. R. This refers to recent reports.

Miss., Shaw.—J. C. Walker, Atty. at Law, writes the Manufacturers Record that as soon as weather permits preliminary survey will be made for the Shaw & Southwestern Railroad, which he organized a few years ago, and he also says that the road will be built. It would run from Shaw to Basy, Miss., about 6 mi.

Mo., Independence.—Construction of a railroad from Independence to Sugar Creek is reported under consideration by local capitalists, who have made surveys. Board of Trade may give information.

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N. C. Henderson.—Henderson & Wilson Ry. Co. has been chartered to build a direct line between those two points, about 30 mi. Board of Trade may be able to give information.

N. C. Gumberry.—Carolina & Northeastern Ry. Co. is the new name for the Weldon & Roanoke Rapids Electric Ry. Co., which will take over the Northampton & Hertford and the Wellington & Powellsville railroads, according to a Raleigh letter to the Manufacturers Record, a merger being approved by the Legislature. J. F. Pennewell may give information.

Okla., Guthrie.—Chicago, Rock Island & Pacific Ry. denies reports that it would build extension of the Billings line to Tonkawa and Ponca City and add another extension from Ringwood to the boundary of Texas.

Okla., Pawhuska.—Osage County & Santa Fe R. R. Co. is chartered to build a connecting line of the Santa Fe System from near Owen to a point south of Fairfax, Okla., 63 mi. Estimated cost \$4,000,000. H. R. Teasdale, T. J. Best, H. L. McCracken, S. W. Hayes and J. R. Cottingham are the incorporators. C. F. W. Felt, Chicago, Ill., is Ch. Engr. of the system. The company says it is expected to let contract as soon as bids are received. Connects with Midland Valley R. R. at Pawhuska.

Okla., Quapaw.—Miami Mineral Belt R. R. Co. is chartered to build a railroad from Quapaw, Okla., to Columbus, Kan., and Baxter Springs, in the same State. Length 35 mi., nearly all in Kansas. Capital stock \$300,000. Incptrs.: J. A. Frates of Springfield, Mo.; J. A. Frates, Jr., and William Matthews of Dilworth, Okla.; T. B. Slack of Clarion, Pa., and J. H. Grant of Oklahoma City, Okla.

S. C., Greenville.—Charleston & Western Carolina Ry. Co. will build several additional tracks at Greenville. A. H. Porter, Augusta, Ga., is Engr. of Roadway.

S. C., Greenwood.—Plans have been re-vised for construction of a railroad from Greenwood to Epworth and Johnston, about 35 mi. Among those interested are H. L. Watson of Greenwood, Rev. W. B. Kinard of Epworth, and S. J. Watson of Johnston, S. C.

Tex., Austin.—Construction of an inter-urban railway from Austin to San Antonio, Tex., about 75 mi., is under consideration and Thomas Tucker, C. E., representing Stone & Webster of Boston, is reported to have investigated the plan. W. E. Long, Secy. Austin Chamber of Commerce, may give information.

Tex., El Paso.—Richard F. Burgess, Chrmn.; James G. McNary, Winchester Cooler, George H. Clements and others have been appointed a committee of the Chamber of Commerce to secure construction of the contemplated El Paso, Pecos Valley & Panhandle Ry. It is proposed to push the matter with a view to connecting with an extension the Santa Fe is building southwest from Lubbock to Silgo, Tex.

Tex., Longview.—Col. L. P. Featherstone, Gen. Mgr. and Purchasing Agent of the Port Bolivar Iron Ore Ry., Longview, is reported saying that an extension of 30 mi. into the iron ore fields will be built.

Tex., Palestine.—Bill has finally passed Legislature to extend the Texas State R. R. from Palestine to Dallas, about 100 mi. Chas. Hurdleston is Mgr. at Palestine.

Tex., Paris.—J. S. Wolfert of the Wolfert Lumber Co., Callon, Ark., writes the Manufacturers Record that he and others are interested in plans to build a standard gauge steam railroad from Paris to Palestine, Tex., about 145 mi. and surveys have been partly made. It is hoped to begin construction in a few months.

Tex., San Antonio.—San Antonio & Aransas Pass Ry. has bought the Fair Grounds and adjacent property for additional terminal tracks. J. S. Peter is V.-P. and Gen. Mgr.

Va., Richmond.—Contract has been let to W. W. Boxley of Roanoke, Va., to build a two-track concrete arch bridge on the Belt Line over the James River for the Richmond, Fredericksburg & Potomac R. R. and the Atlantic Coast Line, replacing the old bridge. Cost nearly \$500,000. J. E. Greiner of Baltimore is engineer in charge of construction. Mr. Boxley also has contract to grade for tracks at the new Richmond Terminal Station.

W. Va., Martinsburg.—C. P. McCausland and others are surveying for a railroad between Shepherdstown and Martinsburg. Office in Ramsey Bldg., Martinsburg.

W. Va., New Martinsville.—Clarksburg Northern R. R., about 13 mi. long from New Martinsville to Middlebourne, W. Va., has been sold to the Citizens' Guaranty & Trust Co. of Parkersburg, W. Va., and W. Eichleay of Pittsburgh for a total of \$51,060, the court having set aside the previous sale several weeks ago. Improvements may be made.

STREET RAILWAYS

S. C., Columbia.—Columbia Ry., Gas & Electric Co. has asked for extension of fran-

chise to build track on Hardin St. for four blocks. A. L. Kenyon is Gen. Mgr.

Tenn., Nashville.—Nashville Ry. & Light Co. is seeking consent of the city to build additional tracks on several streets. F. W. Hoover is V.-P. and Gen. Mgr.

Va., Richmond.—Virginia Ry. & Power Co. plans to build new tracks on a number of streets and avenues under a recently-approved ordinance. T. S. Wheelwright is Prest.

INDUSTRIAL NEWS OF INTEREST

Items of news about industrial, railroad or financial interests, building operations, construction work, municipal improvements, or the sale of machinery or the letting of contracts in the South or Southwest, are invited from our readers whether they are advertisers or subscribers or not. We invite information of this character from readers in the North and West about their Southern business operations, as well as from Southern readers. News of value will be published just as readily when from non-advertisers as from advertisers.

Southern Office and Warehouse.

The Main Belting Co. of Philadelphia, which manufactures "Leviathan" and "Anacanda" brands of belting, has established a Southern office and warehouse at 56 Forsyth St., Atlanta, Ga., and the Southeastern States will be covered from this new office, where H. R. Dunlap is in charge.

An Opportunity for Manufacturers.

Manufacturers of fly-fighting devices, traps, swatters, poisons, etc., will be interested in knowing that there will be opportunity, without cost, to display such devices at the meeting of the Virginia Public Health Association in Lynchburg, Va., on April 16, 17 and 18. The Health Officer of Lynchburg, Dr. M. G. Perrow, is the chairman of the local committee.

Johns-Manville New Quarters.

After March 15 the Louisville (Ky.) branch of the H. W. Johns-Manville Co. will be located at the corner of Fourth Ave. and Guthrie St., in a new building erected by the Speed Realty Co., which affords a frontage on Guthrie St. in the very center of the retail business district of the city. Mr. A. H. Voigt will be in charge of this office and will have under him a corps of salesmen who, in these new and large quarters will be able to provide even larger and better Johns-Manville service to the buying public of Louisville and its environs.

Opens Western Office.

The Stroh Steel-Hardening Process Co. of Pittsburgh, which operates the Lawrence and the Darlington steel foundries, has established an office at 728 Monadnock Bldg., Chicago, with F. Lloyd Mark as Western sales manager, this step being taken in connection with the enlargement of the company's activities. Its processed steel castings, which have extraordinary wear-resisting qualities, are in general use in the steel, cement and mining industries.

Architect Opens Additional Office.

J. F. Leitner, architect, who has been established at Wilmington, N. C., for 11 years, has opened an additional office in Atlanta, Ga., with headquarters in the Healey Bldg. From the Atlanta office Mr. Leitner will take care of business originating in the extreme Southeastern States, while business from the Middle South will be handled at his Wilmington office.

Eastern Office Established.

The Washington Pipe & Foundry Co., Tacoma, Wash., which manufactures machine banded and continuous wooden stave pipe in all sizes for water-works and power plants, announces the opening of an Eastern office at 3904 Woolworth Bldg., New York, where prices will be quoted and complete information furnished regarding the design and construction of its products.

Cottonseed Products and Fertilizers.

To conduct a general brokerage business and to act as import and export merchants

for fertilizer manufacturers and mixers, the firm of McKoin & Co. was organized and began business in Atlanta, January 1. J. Lewis McKoin, formerly with the Virginia-Carolina Chemical Co. and afterwards connected with several of the largest dealers and brokers in Atlanta, is head of the new concern, which handles cottonseed products and fertilizer materials. The general offices are located at 1312 Healey Bldg., Atlanta.

Combination Fountain Co.

James Boggs, formerly of Cleveland, and W. K. Steedman of Atlanta, have formed a partnership under the name of the Combination Fountain Co., and have opened offices and a showroom at 34 Madison Ave., Atlanta. Among the lines of goods that will be handled by them are those of the National Showcase Co. of Columbus, Ga.; the Combination Fountain Co. of Decatur, Ill.; the Buffalo Metal Furniture Manufacturing Co., and others.

To Mechanically Handle Brick.

A device for mechanically handling brick has been developed by R. A. Fontaine, Route No. 5, Roanoke, Va. This consists of a body and loading device for loading and unloading brick without the use of manual labor. It is claimed the brick receive no jars or shocks and are left in neat piles ready for use. Further claims are that it reduces labor, saves the brick from rough handling, reduces the expense of delivering and enables automobile trucks to run continuously in making deliveries. Mr. Fontaine is seeking capital for the manufacture of his device and will furnish full details to those interested.

Prosperity Compels Enlargement of Plant.

The Gruendler Patent Crusher & Pulverizer Co. of St. Louis, which had a fire at its plant several weeks ago, is now established in its new quarters, which are larger and also better equipped with machinery of the most modern type, which places the company in a position to make the most prompt delivery of grinding machinery of all descriptions. Owing to large business and continued great demands for its products, this concern has contemplated for several months the enlargement of its plant, but owing to the rush of orders it was compelled to operate its factory on double time instead of closing down to make improvements. It now has in course of construction a warehouse and modern office on the site of its old building, which adjoins its present manufacturing plant.

Automatic Rail-Slitting Machine.

A valuable invention has been made by Mr. W. Gwilym Owen, 2161 Sherwood Ave., Louisville, Ky. It consists of a machine which will automatically straighten and then separate, when cold, steel rails into billets, respectively the rail head, the web and the foot, making a clean cut edge so that the billets can be rolled into various steel products. The inventor remarks that the old-fashioned method of slitting short lengths of rails, when hot, through slitting

rolls, has many disadvantages, the chief being a fin which the rolls leave on the cut edges for the whole length of the billets, thus making it difficult to produce a sound bar or rod. This new machine can split any length of rail and it can be put down anywhere; alongside of a pile of rails if necessary. It should make its value very apparent now when small mills find it hard to obtain a regular supply of billets.

Refrigerating Machinery Installed.

The York Manufacturing Co. of York, Pa., makers of refrigerating machinery, has made seventy installations of its products at various points throughout the country since January 19, including twenty-three places in the South, among them being the following: Texas Brewing Co., Fort Worth, Tex.; Yarbrough & Bellinger Co., Charlotte, N. C.; Tulsa Ice Co., Tulsa, Okla.; Mono Service Cream Co., Knoxville, Tenn.; Border City Ice & Coal Co., Van Buren, Ark.; City Creamery Co., Kansas City, Mo.; Border City Ice & Cold Storage Co., Heavener, Okla.; Versailles Ice Co., Versailles, Ky.; Furnas Ice Cream Co., Birmingham, Ala.; Montgomery Chero-Cola Co., Meridian, Miss.; Samuel H. Yeates, Glyndon, Md.; Baton Rouge Coca-Cola Co., Baton Rouge, La.; Ottawa County Ice Co., Miami, Okla.; Spartanburg Coca-Cola Co., Spartanburg, S. C.; Dixie Engineering & Insulating Co., Tampa, Fla.; Grunewald Hotel Co., New Orleans, La.; Leland Ice & Cold Storage Co., Leland, Miss.; Independence Ice & Cold Storage Co., Independence, Mo.; Railways Ice Co., Woodward, Okla.; Arkansas & Texas Consolidated Ice & Coal Co., Eldorado, Ark.; Arkansas & Texas Consolidated Ice & Coal Co., Pine Bluff, Ark.; Gulfport Development Co., Gulfport, Miss., and Newport News & Hampton Railway, Gas & Electric Co., Hampton, Va. Several of these were large contracts.

Pulverizing Machinery Simple in Operation.

The Bradley Pulverizer Co., Allentown, Pa., manufacturers of the Giant Griffin mill, the Bradley three-roll mill and the Bradley Hercules mill for pulverizing cement clinker, phosphate rock, cement rock, coal, ores and all other refractory substances, recently sold and shipped to the Franklin Phosphate Co., Newberry, Fla., one of the Griffin mills to be used for grinding hard phosphate rock. It is stated that this machine was selected because it gives a very finely finished product in single operation. This is said to be one of the main features of the Griffin mill, as it is capable of taking material 1/4 inch and under and reduces it to a 95 per cent. through a 100-mesh sieve immediately. It simplifies the grinding department, eliminating auxiliary machines which are generally costly to operate and maintain. These mills are in use at various places throughout the South, including the following cement plants: Clinchfield Cement Corporation, Kingsport, Tenn.; Standard Portland Cement Co., Leeds, Ala.; Dixie Portland Cement Co., Kingsport, Tenn.; Texas Portland Cement Co., Dallas, Tex.; Giant Portland Cement Co., Norfolk, Va.; Virginia Portland Cement Co., Fordwick, Va. Besides, there are a number of these mills used by fertilizer manufacturers, including the Hubbard Fertilizer Co. of Baltimore, Md.; Mt. Pleasant Fertilizer Co., Mt. Pleasant, Tenn.; Armour Fertilizer Co. of Jacksonville, Fla., and others. They are also employed in the South for pulverizing limestone for agricultural purposes, the G. C. Buquo Lime Co. of Buquo, N. C., having one of the largest pulverizing units manufactured, the Bradley Hercules mill.

TRADE LITERATURE

Concrete on the Form.

The Standard Portland Cement Co. of Leeds, Ala., in volume 2, No. 2, of "The Standard," tells why the farmer should use concrete. It is pointed out that this material is of great advantage for numerous purposes on a farm, including feeding floors for hogs, etc.; barnyard pavements, troughs, tanks, gutters, etc., as well as for the erection of farm buildings. Several other substantial subjects are discussed, and there is an entertaining article about Buffalo Bill.

Effective and Economical Road Roller.

A folder describing and picturing the Austin tandem motor roller is published by the Austin Western Road Machinery Co., Chicago. Simplicity of control is a prominent feature of this road roller; one lever operates the start, the stop and the reverse

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

gears. These changes are all done smoothly. A foot brake, which works instantly, gives complete control on hills and in other difficult places. Among other advantages are a powerful and durable engine, rapid and accurate steering apparatus, unobstructed view on both sides for the operator, economy in use and maintenance, etc.

Value of Concrete Paving.

"Your Streets," which is published by the Portland Cement Association, 111 W. Washington St., Chicago, contains in its February issue many evidences of the value of concrete for paving streets and alleys. It is copiously illustrated and abounds in entertaining facts relative to "Concrete for Permanence," which is its motto.

The Automatic Shovels.

The Thew shovels—steam, electric and gasoline—which are manufactured by the Thew Automatic Shovel Co. of Lorain, O., are fully described and illustrated in Catalogue No. 9. Pictures show in detail the various kinds of shovels made and some of them at work upon various jobs to make plain the many adaptabilities of which they are capable. The reading matter gives full particulars concerning them in a style that is both attractive and illuminating. There are six sizes of the Thew shovels, ranging in weight from 15 to 60 tons, with dippers of from one-half yard to two yards capacity.

[Continued on Page 85.]

FINANCIAL NEWS

FINANCIAL CORPORATIONS

Ala., Abbeville.—Henry National Bank is chartered; capital \$50,000.

Fla., Jacksonville.—A Morris Plan company is being organized. Among those interested are E. W. Lane, Prest. Atlantic National Bank; Arthur F. Perry, Arthur G. Cummer, Frank P. Fleming and Cecil Wilcox.

Fla., Live Oak.—Mr. J. Blume writes that he and associates are connected with the Commercial Bank of Live Oak, which will begin business about Mch. 15, and have no connection whatever with the Farmers' State Bank, as recently reported.

Fla., St. Petersburg.—Foley-Carter Insurance Agency, capital \$30,000, is inceptd. by Chas. R. Carter and Kenneth Spader.

Ga., Savannah.—Bankers Insurance Co., capital \$25,000, is inceptd. by Jacob S. Collins, Grover C. Paulsen, William M. Davidson, H. M. Boley, J. E. Jaudon, J. A. Logan and John E. Foy.

La., Monroe.—Plans are being made, it is reported, to organize a new bank. E. R. Bernstein of Shreveport is interested.

Md., Baltimore.—National Building and Loan Assn., Inc., 703 N. Gay St.; capital \$650,000; incorporators, Geo. Desch, John R. Parker and Harry A. Kohlermann.

Md., Baltimore.—Concord Building and Loan Assn. of Baltimore City, Inc., 463 Calvert Bldg., capital \$300,000; incorporators, J. Carroll Sultzer, Henry B. Nuth and Thomas B. Meushaw.

Md., Baltimore.—Savings Check Corp., 1125 Fidelity Bldg., capital \$100,000, is inceptd. by Carleton Perry, J. Lawrence Schenberger and Arthur Bryan.

Md., Baltimore.—The Yonover Building & Loan Assn., 301 N. Exeter St., capital \$30,000, is inceptd. by Samuel Simon, Sander Goloskov, Nathan Galvansky and Manual M. Auslander.

Md., Baltimore.—State Investment Corp., 312 Equitable Bldg., capital \$150,000, is inceptd. by Jacob I. Goldstein, John J. Kaplan and Geo. P. H. Greenfield.

Mo., Blackburn.—Farmers' Bank of Blackburn has begun business; capital \$25,000; J. D. Price, Prest.; L. M. Chiswell, Cash.

N. C., Benson.—Benson Loan & Insurance Co. inceptd., authorized capital \$100,000, began business Mch. 1; incorporators, M. T. Britt, W. H. Massengill and W. H. Stocumb.

N. C., Durham.—A Morris Plan bank, authorized capital \$50,000, is organized with W. F. Carr, Prest.; R. L. Baldwin, V.-P., and Southgate Jones, Secy. and Treas.; J. S. Patterson, Atty.

N. C., Pineville.—Pineville Building and Loan Association is organized with J. E. M. Davenport, Prest.; J. C. Buice, V.-P.; Leon Smith, Secy. and Treas. Business is to begin Mch. 10.

Okla., Ponca City.—Security State Bank has begun business. Dr. George H. Neimann and Louis S. Barnes are directors.

Okla., Tulsa.—West Tulsa State Bank chartered and inceptd., capital \$25,000, surplus \$2500. J. W. Woodford, Prest.; Martin Walters and E. G. Hastings, V.-Ps.; A. G. Marrs, Cashier. Business will begin March 10.

S. C., Paolet.—Employees' Savings Bank of Paolet, in Spartanburg County, capital \$5000, is chartered. J. R. Westmoreland, Prest.; C. W. Bostick, V.-P., and John M. Connor, Cashr. Business is to begin Mch. 10.

Tenn., Memphis.—Memphis Savings & Loan Corporation is organized with J. W. Ramsey, Prest.; J. J. Thornton and R. M. Metcalf, V.-Ps.; C. C. Ogilvie, Atty.; J. W. McKinney, Treas., and S. S. Ogilvie, Secy. and Mgr.

Tex., Dallas.—Tenison National Bank, capital \$500,000, has filed application for

charter to succeed E. O. Tenison & Sons, private bankers. E. O. Tenison, Prest.; J. D. Gillespie, Cash.

Tex., Dallas.—Conservative Loan Co. is chartered; capital \$25,000; business began Mch. 1 with F. W. Christner, Prest.; A. L. Albin, V.-P.; Horace Peay, Secy. and Treas.

Tex., McLean.—American National Bank, a conversion of the American State Bank, is chartered; capital \$25,000.

Tex., Panhandle.—First National Bank, a conversion of the First State Bank, is chartered; capital \$25,000; J. H. Pritchard, Prest.; V. C. Nelson, V.-P.; J. G. Hix, Cash.

Tex., Plano.—Plano National Bank and the First Guaranty State Bank have consolidated under the name of the Plano National Bank; capital \$130,000; surplus \$50,000; Geo. W. Bowman, Prest.; J. H. Bowman, V.-P.; C. M. Jasper, Cashr.; Ray M. Jasper, Asst. Cashr.

Tex., Schwertner.—First National Bank, a conversion of the Farmers' State Bank, is chartered; capital \$25,000.

Tex., Sierra Blanca.—The Sierra Blanca State Bank, capital \$30,000, has begun business. T. D. Love, Prest.; V. E. Cammack, V.-P.; E. R. Siliman, Cash.

Tex., Tehuacana.—First State Bank of Tehuacana, capital \$10,000, is authorized to begin business; W. M. Moody, Prest.; W. G. Forrest, Cash.

Tex., Temple.—A new bank is reported organized with H. C. Poe as Prest.

Tex., Waco.—Texas Land Mortgage Bankers' Assn. is inceptd. by C. L. Kribs and William G. Breg, Dallas; C. W. Clarkson, Fort Worth; George V. Rotan and J. N. McFarland, Waco; R. L. Slaughter, Austin, and E. D. Henry, San Antonio.

Va., Norfolk.—Southern Insurance Agency, inceptd., authorized capital \$50,000, is to begin business immediately with E. C. Sawyer, 300 Plume St., Prest.; D. L. Flory, V.-P.; W. F. H. Enos, Secy. and Treas.

W. Va., Charleston.—Community Savings & Loan Co. is chartered; authorized capital \$100,000; H. E. Shadle, Prest.; L. E. Poteet, 1st V.-P.; E. C. Bauer, 2d V.-P.; W. H. Vineyard, Treas.

W. Va., South Charleston.—Bank of South Charleston, capital \$25,000, is organized with H. B. Lewis, Prest.; Geo. A. Schlossstein, V.-P.; Geo. T. Harness, Cashier. Business is expected to begin March 31.

NEW SECURITIES

Ala., Athens.—(Street).—Question of issuing \$135,000 of street-improvement bonds is being considered. Ernest Hine is Mayor.

Ark., Lonoke.—(Drainage).—\$110,000 of bonds Drainage Dist. No. 5, Lonoke County, have been purchased at 102.89 by G. H. Walker & Co., Chicago.

Ark., Pine Bluff.—(School).—Pine Bluff School Dist. is authorized to issue bonds. Address Board of Trustees.

Ark., Van Buren.—(Levee).—Crawford County Levee Dist. proposes, it is stated, to issue \$25,000 levee-building bonds. Address Board of Commrs.

Fla., Arcadia.—(School).—Bids will be received until noon Mch. 30 for the following \$500 denomination De Soto County bonds, dated Jan. 1, 1917: \$35,000 of 5 per cent. 15-30-year Arcadia Special Tax School Dist. No. 1; \$5000 of 6 per cent. 10-20-year bonds Oak Hill Special Tax School Dist. No. 8, dated July 1, 1916; \$17,000 of 6 per cent. 10-20-year bonds Fort Green Special Tax School Dist. No. 11; \$10,000 of 6 per cent. 10-25-year Gardner Special Tax School Dist. No. 14; \$18,000

[For Additional Financial News, See Pages 74, 75 and 76.]

THE PENNSYLVANIA RAILROAD COMPANY.

General Office, Broad Street Station,

Philadelphia, Pa., February 28th, 1917.

The Board of Directors herewith submit to the Stockholders of The Pennsylvania Railroad Company a synopsis of their Annual Report for the year 1916:

CONDENSED INCOME STATEMENT.

Railway operating revenues.....	\$30,278,533.20
Railway operating expenses.....	106,164,581.71
Net revenue from railway operations.....	\$64,113,951.50
Railway tax accruals.....	\$9,022,399.69
Uncollectible railway revenues.....	35,540.58
	9,067,940.27
Railway operating income.....	\$55,056,011.23
Non-operating income:	
Income from securities, accounts and sinking and other reserve funds.....	\$20,479,070.37
Rent income, etc.....	2,685,792.64
	23,164,863.01
Gross income.....	\$78,220,874.23
Deductions from gross income.....	25,944,578.21
Net income.....	\$52,276,296.02
Disposition of net income:	
Income applied to sinking and other reserve funds.....	\$2,138,959.19
Dividend of six per cent.....	29,952,252.00
Income appropriated for road and equipment, improvements, etc.....	12,928,711.26
	45,019,922.45
Balance transferred to credit of Profit and Loss.....	\$7,256,373.57

CONDENSED GENERAL BALANCE SHEET.

December 31st, 1916.

Assets.	
Investments:	
Investment in road and equipment.....	\$524,285,944.43
Improvements on leased railway property since June 30th, 1907.....	19,972,469.06
Sinking funds.....	2,219,868.84
Miscellaneous physical property.....	2,132,365.19
Securities owned and advances to affiliated and other companies.....	344,074,521.41
Current assets.....	130,902,840.97
Deferred assets, including insurance and other funds.....	31,659,382.90
Unadjusted debits.....	3,579,568.25
	\$1,058,826,940.97
Liabilities.	
Capital Stock.....	\$199,204,700.00
Premium realized on Capital Stock from January 1st, 1909.....	7,254,247.43
Bonded debt and other obligations.....	250,356,844.61
Current liabilities.....	86,463,789.38
Deferred liabilities.....	446,648.00
Unadjusted credits, including accrued taxes and depreciation reserves.....	41,425,397.62
Corporate surplus:	
Additions to property through income and surplus since June 30th, 1907....	96,681,517.25
Sinking fund reserves, miscellaneous fund reserves, etc.....	40,479,612.80
Profit and Loss.....	33,514,297.53
	\$1,058,826,940.97

GENERAL REMARKS.

Revenues.

Your Company carried an unprecedented volume of traffic on its lines, resulting from a continuance of the European War, and from the further expansion of general business throughout the country, which produced an increase of 17 per cent. in the total Operating Revenues compared with 1915. The Freight Revenue increased 17 per cent.; Passenger Revenues increased 16 per cent.; and Express Revenue increased 25 per cent. Incidental Revenue increased 34 per cent., due in a large measure to demurrage charges paid for the unreasonable detention of cars by consignees and shippers, but the Company's freight revenues would have been greater had the cars not been so delayed, and the Hire of Equipment payments would have been lower.

Expenses.

The total Operating Expenses increased 16 per cent. compared with 1915; Maintenance of Way and Structure Expenses increasing 14 per cent.; Maintenance of Equipment 19 per cent. and Transportation 17 per cent. To the same underlying causes can be attributed the increase in all of these expenses, namely, greater traffic and substantial increases in the cost of material, supplies and labor.

Taxes.

Special attention is directed to the Taxes, which increased 19 per cent., due principally to an increase in Federal Income Tax from 1 per cent. to 2 per cent., and to larger revenues. This item of expense is one over which the management has no control and the increase [129 per cent. in the last ten years] shows no sign of abatement. Taxes now require 14 cents out of every dollar of net operating revenue, compared with 8

cents ten years ago. It is significant that over two-thirds of the increase in Operating Revenues was absorbed by increased expenses and taxes. The time seems close when taxpayers must for their own protection demand that all governmental expenditures be fully reviewed before being authorized, so that some reasonable limit may be placed on the constantly increasing Federal, State and Municipal expenditures for non-productive projects.

Final Results.

The Net Income for 1916 amounted to \$2,276,504.12, an increase of \$9,851,181.89 compared with the previous year. Against this were charged the appropriations to the Sinking and Other Reserve Funds, Cash Dividends aggregating six per cent. on your Capital Stock and Road and Equipment expenditures on lines owned and leased, leaving a balance of \$7,256,373.57, which was transferred to the credit of Profit and Loss Account.

Rates.

The appeal by your Company from the order of the Public Service Commission of Pennsylvania, reducing certain anthracite coal rates, is still pending in the Common Pleas Court of Dauphin County; and the proposed advance in intrastate passenger rates in the State of New Jersey, which is a part of the general plan suggested in 1914 by the Interstate Commerce Commission as a means for procuring additional revenue, is still suspended by the Public Utilities Commission of that State.

The necessity for higher rates is daily becoming more evident, for while the results for the first eight months of 1916 showed a satisfactory increase, yet since then the net returns have shown a marked reduction due to higher costs. Your Company, to avoid congestion and to handle the traffic econ-

ically and promptly, has expended, and is now expending, large amounts of capital upon which a return must be earned; it has made adjustments in employees' wages to retain them in the service and enable them to meet the higher living costs; and is paying extraordinary increases in the prices of materials and supplies, and in taxes; in addition to which it is burdened with conflicting and wasteful regulation and laws. These increased costs have made heavy inroads into your profits during the past few months, and it is expected that their effect will be even more acute in 1917. With such a widespread and pressing demand for larger terminals, greater facilities and more equipment, it is essential (if they are to be provided) to grant the railroads the higher rates necessary to place them in a position to meet such rising costs, and give them the earning basis to attract new capital for the additional transportation facilities and service so urgently required. The lack of sufficient surplus for many years past has prevented the railroads from providing such additions and betterments in advance of traffic demands, and while labor and material costs were reasonable. An illuminating feature of the railroad situation appears in the Interstate Commerce Commission report of December 1st, 1916, showing that for practically all the railroads in the country the average freight revenue per ton mile has fallen from 8.9 mills in 1891 to 7.3 mills in 1915, a decrease of over 17 per cent., notwithstanding the greatly increased costs and higher standards entering into the transportation service. Another important statement in that report showed the return on the investment in Road and Equipment for the year ending June 30th, 1916, to be slightly in excess of 6 per cent. That return is a great improvement compared with preceding years, but it was earned in a year when the country was enjoying the greatest prosperity in its history, and when so many of the industries which are free to fix their prices to meet market conditions were earning many times six per cent. The latter is a healthy condition, beneficial to the country at large, but it is also one in which the railroads, which must pay the greatly increased prices, wages and taxes, should be allowed to participate through higher rates upon the commodity they sell, viz. transportation. Under the existing international complications, and exceptional industrial activity, there should be no delay in placing the railroads in the strongest financial and physical condition.

Return on Investment in Road and Equipment.

While your Net Income for the year, after deducting the sinking and other reserve fund charges, was equivalent to 10 per cent. upon the outstanding Capital Stock, the return earned on the total investment in Road and Equipment provided for public use was only 5.4 per cent. on the Pennsylvania Railroad and lines directly operated, and but 5.8 per cent. on the System East and West of Pittsburgh. Your Company maintained its dividend and earned a substantial surplus, but if it had not heretofore consistently pursued the policy of investing its surplus above reasonable dividends in the betterment of your railroads and equipment instead of providing therefor through the issue of additional bonds and stock, the present dividends could not be maintained under the existing traffic rates.

Traffic.

Improved efficiency characterized the operation during the year, in both freight and passenger traffic. The number of tons increased 16 per cent. and the tonnage mileage increased 18 per cent., but largely by heavier car loading the additional tonnage and mileage required an increase of only 8 per cent. in train mileage. It is interesting to point out that the average train load has been increased in the last ten years from 553 tons to 870 tons, or 57 per cent. The average revenue per freight train mile increased 8 per cent., but heavier expenses and taxes absorbed the increase and caused a slight decrease in net revenue per freight train mile. The average ton mile revenue received was slightly less than in 1915, being only .603 of a cent per ton mile, which is less than 50 per cent. of the average freight rates paid on either the German or French Roads in normal years, and they have the additional advantage of much lower wages, taxes, and other operating costs.

The number of passengers increased 16 per cent., passenger mileage 15 per cent., passengers per car 13 per cent., while pas-

senger train mileage increased only 5 per cent.

The Eight Hour Law.

The employees in the train service on most of the railroads in the United States submitted demands through their labor organizations for an eight hour basic day at the existing rates of pay, and time and one-half payments for all overtime in freight and yard service. Although many of the men in the train service do not work eight hours per day, this reduction in the time constituting a basic work day meant in effect an unjustifiable increase of pay for most of these employees. Conferences extending over several months were held between the representatives of the railroads and the trainmen's organization, with the hope that by arbitration, in which the public would have been represented, some reasonable solution could be reached, for the railroads felt that, as compared with other employment in and out of the railroad service, these men were liberally treated, if not, in some cases, overpaid. The trainmen would not consent to arbitration, or other investigation, and orders for a strike were given in case the railroads refused to accede to their demands. The transportation service of the Country was threatened with stoppage at a time when industries in general had reached their greatest production, and the food supply and other necessities of life, especially in the larger cities, were absolutely dependent on the continued operation of the steam railroad systems. It is questionable whether many of the men, especially those in your service who have faithfully served the Company for many years, would finally have deserted their positions, yet the untold suffering and disruption of business that would have resulted from the execution of this threat, made by the trainmen through their leaders, were so evident that the "Eight Hour Law" was enacted by Congress in the brief period of a few days. The threatened strike was averted, but in the hasty proceedings leading to its enactment, the principle of arbitration, as the paramount and equitable method of settling labor disputes, was sacrificed, not in the public interest, nor for the benefit of a majority of railroad employees, but for a group of men constituting only a small percentage of the total number, and no action was taken by Congress to prevent or settle future strikes.

This law provides that beginning January 1, 1917, eight hours shall in contracts for labor and service be deemed a day's work, and the measure or standard of a day's work, for the purpose of reckoning compensation for employees engaged in the operation of interstate trains, and provides a Commission of three to observe the effects of the law for a period of from six to nine months, and report its findings to the President and Congress; but it also requires that, pending the report of the Commission and for thirty days thereafter, the existing standard day's wage shall be paid for an eight hour day, and for overtime the employees shall be paid not less than the pro rata rate for such standard eight hour day. While wages are increased by its provisions, there is apparently nothing to prevent an employee working more or less than eight hours per day. Your Management being unable to satisfactorily interpret the provisions of the law, and having grave doubts as to its constitutionality, has instituted proceedings to test its validity in the Federal Courts.

The Federal and State laws and the public welfare require Railroad Companies to render a continuous and adequate transportation service, and it should be equally obligatory that no disruption of that service from any cause be tolerated. Therefore, in the public interest, which is paramount, future strikes or lockouts should be prevented until the differences between the railroads and their employees are first submitted to independent and impartial review and arbitration.

Federal Transportation Inquiry.

A Joint Congressional Committee has been appointed, upon the recommendation of the President, to investigate the efficiency of the existing system of public regulation in protecting the rights of shippers and carriers, and in promoting the public interest.

The Railroads will assist this investigation, and have already submitted evidence that the present system of Federal and State regulation is inconsistent, confusing and wasteful. They have, therefore, re-

quested consideration of a program, which, in substance, covers—

1. Federal supervision of the issue of railroad securities;
2. Federal incorporation of interstate railroads;
3. Exclusive Federal regulation of rates;
4. A regional and functional division of the work of the Interstate Commerce Commission;
5. Restricting rate suspensions by the Commission to not more than sixty days;
6. Giving the Interstate Commerce Commission the power to prescribe minimum as well as maximum rates.

The aim of constructive legislation should be to allow the railroads to conduct the transportation service under such conditions as will preserve their credit so that they can at all times efficiently and economically carry the commerce of the Country, and be its most available and dependable instruments for National defense. Under the existing conflicting systems of public regulation by the Federal and State Governments, the railroads have not been allowed to earn sufficient profits to place them in that position, and, therefore, there has been a serious decline in constructing new mileage, new equipment and sufficient facilities to accommodate the shippers and the public. With the increased traffic in the past eighteen months this condition was somewhat improved, but the needs of the situation have not yet been satisfactorily met. The common carriers as a whole for many years have had to depend for new capital on the increase of their debt and mortgage obligations, rather than by the sale of Capital Stock, so that it is evident their credit is not yet securely founded. Therefore a serious responsibility rests upon this Congressional Committee to make a thorough, prompt and impartial investigation of the entire transportation problem; and recommend legislation that will insure sound credit for the railroads; reasonable rates and adequate service to the public; and replace conflicting and wasteful regulation with unified, responsible, regulation by the Federal Government, under which the railroads will be permitted to earn a fair return on the capital already invested in the public transportation service, and sufficient to attract the additional capital requisite to regularly enlarge and improve their terminals, tracks, equipment and other facilities in advance of actual commercial requirements.

Financial.

On December 31st, 1916, the Company had 90,388 stockholders, whose average holdings were 110 shares. All of the stock is held in the United States except less than 3 per cent.

The Capital Stock outstanding was increased by \$100 through the sale of that amount of stock held by the Company.

The funded debt, equipment trust obligations, mortgages and ground rents payable show a net decrease of over \$5,460,000. This is due chiefly to redemptions of bonds through the various Sinking Funds; to the conversion of Consolidated Mortgage Sterling Bonds into Dollar Bonds; and to the maturity and payment of over \$4,638,000 of equipment trust obligations. The increase in current liabilities (which is also reflected in the Company's assets), is due chiefly to the issue of \$20,000,000 of short term notes, which mature in April, 1917.

The stockholders, in pursuance of notice already given, will be asked to approve of an increase in the authorized indebtedness of the Company to the extent of \$75,000,000. If approved, the Board of Directors will thereafter be enabled through the issue of bonds secured by the General Mortgage, or by such other form of security as at the time may be most advantageous to the Company, or through the issue and sale of previously authorized Capital Stock, to procure the funds necessary to meet maturing obligations, including \$30,000,000 of 3% per cent. Nine Month Notes issued for capital purposes during the year, which will mature in April, 1917, and to provide

the necessary capital expenditures on your constantly expanding property.

It has been deemed advisable to acquire the property and franchises of the Harrisburg, Portsmouth, Mt. Joy & Lancaster Railroad Company, the railroad of which Company extends from Lancaster to Harrisburg, and forms an integral part of the main line of your Company. This line is operated under a nine hundred and ninety-nine year lease. Your Company now owns over 99 per cent. of the Capital Stock, and as the necessity for maintaining it as a separate corporation no longer exists, an agreement providing for its acquisition will, in accordance with notice given to the stockholders, be submitted for approval at the annual meeting.

Your Company, as the majority stockholder in the Long Island Railroad Company, and with the view of obtaining the shares which it does not now hold, amounting at par to \$5,302,100, has offered a like amount of Five Per Cent. Debenture Bonds of the Long Island Railroad Company, which, if the plan be consummated, your Company is to receive in part payment for advances to that Company. If a satisfactory number of the minority shares of that Company will co-operate to make such a plan effective, your Company is also willing to accept additional Common Stock of the Long Island Railroad Company in settlement of the balance of its indebtedness, so that the fixed charges of the Long Island Railroad Company may be materially reduced and its credit strengthened to finance its future capital requirements.

Road and Equipment.

The report shows that the Company has continued its large program of expenditures for the enlargement and improvement of its railroad and the purchase of additional equipment, relying upon the public to see that higher rates are paid to justify a continuance of such a policy. Nearly \$25,000,000 was expended for Road and Equipment on the Pennsylvania Railroad and Lines directly operated by it, of which \$12,928,711 was charged against the Surplus Income for the year. Several pages of the report are devoted to a description of the improvements to the railroad, stations, yards, and track extensions all over the System. The equipment purchased during the year consisted of 264 locomotives, 403 passenger cars and 6252 freight cars.

Pension Department.

Your Company has 3272 pensioners on its rolls, and the pensions paid during the year amounted to \$1,042,080, an increase of 187 pensioners and \$76,274 in the payments made.

Federal Valuation.

The valuation of your lines, under the direction of the Valuation Division of the Interstate Commerce Commission, in which your Company is constantly co-operating, continued throughout the entire year. The field work preparatory to the inventory of the property has been practically completed for the Northern Central Railway, which is leased by your Company, and for various leased lines in the State of New Jersey. Considerable work of this character was also done during the year on the Western New York and Pennsylvania Railway, which is also leased by your Company.

The cost to your Company in carrying out this work during 1916 was \$169,926.52 and the total to December 31st, 1916, was \$314,545.17. The expenditures of this character by the Lines East of Pittsburgh amounted to \$293,764.08 for the year and aggregated \$586,578.42 to December 31st, 1916, and for the entire System East and West of Pittsburgh \$623,346.59 for the year and \$1,099,040.07 to December 31st, 1916.

SAMUEL REA,
President.

STOCKHOLDERS MAY OBTAIN COPIES OF THE ANNUAL REPORT COMPLETE BY APPLYING TO OR ADDRESSING

LEWIS NEILSON, SECRETARY,

BROAD STREET STATION, PHILADELPHIA, PA.

Capital and Surplus
\$4,000,000



Total Resources
\$38,000,000

The Largest National Bank in the South

Liberal Accommodations to Manufacturing Corporations

**MERCHANTS-MECHANICS
FIRST NATIONAL BANK
OF BALTIMORE**

**The National Exchange Bank
OF BALTIMORE, MD.**
Hopkins Place, German and Liberty Sts.
Capital \$1,500,000.
March 30, 1915, Surplus and Profits,
\$550,000.00.
OFFICERS:
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Fla., Barstow—(Road).—Bids will be received on or before March 29 for \$100,000 of 6 per cent. bonds Special Road and Bridge Dist. No. 1, Polk County, dated Mch. 1, 1917. J. A. Johnson is Clerk.

Fla., Brooksville—(Waterworks).—\$20,000 of 6 per cent. \$1000 denomination bonds have been purchased at \$20,917 and accrued interest by Cummings & Prudden, Toledo, Ohio.

Fla., Kissimmee—(Road).—Steps are being taken in Osceola County to issue \$150,000 of bonds. Address County Commrs.

Fla., Starke—(Street).—\$30,000 of 6 per cent. \$500 denomination bonds have been

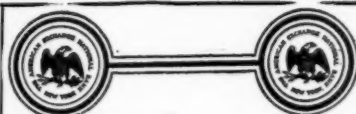
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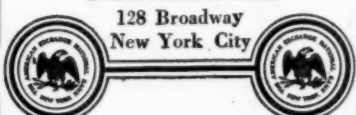
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Fla., Tampa—(Road).—\$30,000 Wimauma Special Road Dist., Hillsborough County, bonds are voted. Address County Commr. (Lately noted under Bradentown, Fla.)

Ga., Alma—(Road, Jail, Courthouse).—\$50,000 of road, \$10,000 jail and \$30,000 courthouse, Bacon County, bonds, to be voted on June 14, are 10-20-year 5 per cent. Denomination \$500. Address T. B. Taylor, Ordinary. Chas. Striplin is Clerk Court of Ordinary.

Ga., Camilla—(School).—\$5000 Sale City Dist., and \$5500 Hopeful Dist., Mitchell County bonds are voted. Address Board of Trustees.

Ga., Doerun—(School).—Election is soon to be called to vote on \$15,000 of bonds. Address School Board.

Ga., Sanderville—(School).—Bids will be opened about April 1 for \$20,000 of 5 per cent. \$1000 denomination bonds maturing 1947. C. B. Quillian is Secy. Board of Education.

Ga., Waycross—(Road).—Petition is to be circulated in Ware County, it is reported, asking that an election be called to vote on \$1,000,000 of bonds. Address County Commissioners.

Ky., Greenup—(Road, Bridge).—\$40,000 of an issue of \$200,000 of 5 per cent. \$1000 denomination Greenup County bonds, maturing 1938 to 1945, have been purchased at 106 by Tillotson & Wolcott Co., Toledo, O. A. J. Cochran is Clerk.

Ky., Princeton—(Road).—No bond issue for Caldwell County. Petition not properly gotten up. R. L. Gresham is County Clerk.

La., Alexandria—(Road).—\$100,000 of bonds Road Dist. 11 and 12, Rapides Parish, have been purchased by the Whitney-Central Trust & Savings Bank, New Orleans.

La., Baton Rouge—(State Certificates).—\$400,000 of 5 per cent. \$10,000 denomination bonds, dated Jan. 1, 1917 and voted Nov. 7, 1916, to liquidate floating indebtedness of State Penitentiary, have been purchased at par, accrued interest and \$4200 premium by the Hibernia Bank & Trust Co., New Orleans.

La., Clinton—(School).—Bids will be received until 10 A. M. April 4 for \$10,000 of 5 per cent. 1-10-year \$1000 denomination bonds School Dist. No. 10, East Feliciana Parish. C. W. Ball is Pres. East Feliciana Parish School Board.

La., Crowley—(Drainage).—\$100,000 First Ward Drainage Dist., Acadia Parish, \$500 denomination bonds have been purchased at par and accrued interest by Powell, Gerard & Co., Chicago.

La., Convent—(Road).—Bids will be received until 11 A. M. Mch. 10 for \$200,000 of St. James Parish bonds. F. M. Bertaut is Secy. Police Jury.

La., Crowley—(Road).—\$400,000 of 5 per cent. bonds Good Road Dist. No. 1, Acadia Parish, have been purchased at \$3000 premium and accrued interest by Powell, Gerard & Co., Chicago, and the Kauffman-Smith Investment Co., jointly.

La., Donaldson—(Road).—\$50,000 of 5 per cent. \$500 denomination bonds Ascension Parish Road Dist. No. 2, dated Jan. 1, 1917, have been purchased at par, interest and \$2251 premium by the Louisiana National Bank, Baton Rouge, La.

La., Donaldsonville—(Levee).—\$150,000 of 5 per cent. 5-10-year \$500 and \$1000 denomination bonds Lafourche Basin Levee Dist. awarded conditionally, have been purchased at par, accrued interest and \$1509 premium by the Whitney-Central Trust & Savings Bank, New Orleans.

La., Gretna—(Road).—Bids will be received until 3 P. M. Sunday, March 11, for \$3000 of 5 per cent. 13-year \$100 denomination bonds Road Dist. No. 1, Jefferson Parish. Address Board of Suprs., E. B. Anthony, Pres., Harahan City, R. F. D. No. 2.

La., New Roads—(Road).—Bids will be received until 10 A. M. March 23 for \$50,000 of bonds. E. Guldros is Secy. Board of Suprs. Pointe Coupee Parish.

La., Pleasant Hill—(Road).—Bids will be received until March 17 by W. R. Ross, Secy. of Board of Dist. Suprs., Sabine Parish, for \$30,000 of 5 per cent. bonds Road Dist. No. 6.

Miss., Belzoni—(School).—\$50,000 of bonds for colored public school building are voted. T. L. Gilmer is Mayor and F. M. Pepper, Clerk.

Miss., Columbus—(Road).—Election is to be held in Lowndes County to vote on \$25,000 of bonds Artesia Road Dist. Address County Commissioners.

Miss., Meridian—(Paving).—Bids will be received until March 13 for \$3155.64 of 6 per

cent. \$315.56 denomination bonds, dated October 1, 1916, and maturing one each year beginning April 1, 1918. R. L. Blanks is City Clerk.

Miss. Meridian—(Refunding).—Election is to be held Mch. 20 to vote \$28,950.37 of bonds to refund sidewalk paving bonds due April 1, 1917, and ordinance has been prepared providing for the sale of them. John M. Dabney is Mayor and R. L. Blanks, City Clerk and Treas. A later report says \$18,000 of the issue has already been awarded at \$270 premium, and accrued interest to J. C. Mayer & Co., Cincinnati, Ohio.

Mo., Independence—(School).—\$50,000 of 4½ per cent. 10-20-year bonds have been purchased at \$50,733.33 by E. T. Richards, McAlester, Okla.

Mo., Charleston—(Sewer).—In about two or three months Mississippi County will probably issue sewer ditch bonds. B. B. Guthrie is County Clerk.

Mo., Kansas City—(Union Station).—A referendum vote will be taken Mch. 6 to vote on issuing \$700,000 of Union Station bonds, voted in 1915. Eugene H. Blake is Comptroller.

Mo., Mexico—(Septic Tank).—Election is to be held in April to vote on bonds. W. Dearing is City Clerk.

N. C., Charlotte—(School).—Steps are being taken to issue \$10,000 of bonds Paw Creek School Dist. No. 5, Mecklenburg County. Address School Commrs.

N. C., Elizabeth City—(Street).—\$100,000 of an authorized issue of \$120,000 of 5 per cent. 20-40-year bonds are to be issued in near future. P. G. Sawyer is Mayor.

N. C., Hickory—(Library, Sewer Refund-

ing).—Election is to be held Apr. 2 to vote on \$12,000 of library bonds. In the near future bids will be asked for \$11,000 refunding sewer bonds. Address City Manager Bailey.

N. C., Mt. Holly—(Improvement).—Bids will be received until 8 P. M. Mch. 9 for \$5000 of 6 per cent. bonds Mt. Holly. Address A. C. Jones, Atty.

N. C., Raleigh—(State Bonds).—Legislature has voted to issue \$3,075,000 of bonds to enlarge State educational and charitable institutions as follows: Bonds are to be issued within six years, beginning 1917, \$500,000 each year at 4 per cent. and payable \$100,000, beginning July 1, 1923, and on the first of July of each year until all the series is paid: State Hospital for Insane and Epileptics, Raleigh, \$200,000; State Hospital for the Insane, Morganton, \$200,000; State Hospital for Colored Insane and Epileptics, Goldsboro, \$125,000; State School for Deaf-Mutes, Morganton, \$60,000; Stonewall Jackson Training School for Boys, Concord, \$60,000; University of North Carolina, Chapel Hill, \$500,000; State Tuberculosis Sanitarium, Montrose, \$150,000; State School for Feeble-minded, Kinston, \$75,000; East Carolina Training School, Greenville, \$200,000; Appalachian Training School, Boone, \$50,000; Cullowhee Normal and Industrial School, Cullowhee, \$40,000; College of Agriculture and Engineering, Raleigh, \$300,000; State Normal and Industrial College, Greensboro, \$500,000; Negro Agricultural and Technical School, Greensboro, \$25,000; State Normal Schools for Negroes, Winston-Salem, Fayetteville and Elizabeth City, \$10,000; State Board of Education, to aid in building public schoolhouses, \$500,000; State storage warehouse, Raleigh, for public

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documents, printing materials, etc., \$50,000; for the installation of approved apparatus for the protection of State institutions against fire, \$40,000. Thos. W. Bickett is Governor.

N. C., Shelby—(School).—Bill has been introduced in the Legislature providing for an issue of bonds, amount not exceeding \$25,000. Address Board of Education.

N. C., Wilson—(Water, Sidewalk).—Bids will be received until 7.30 P. M. Mch. 9 for the following 4½ per cent. bonds: \$50,000 water and \$32,000 sidewalk. P. A. Hinnant is Clerk Board of Commrs.

N. C., Winston—Salem (Sewer, Water, School).—The \$175,000 sewer, \$125,000 water and \$50,000 school bonds to be voted on Mch. 27 are 30-year, not exceeding 5 per cent., \$500 and \$1000 denomination. T. P. Fulton and F. A. Foogie, Ordinance Committee.

N. C., Yadkinville—(Road).—Bids will be received until noon Mch. 10 for \$140,000 of 40-year Yadkin County bonds, interest not exceeding 6 per cent. Bids will also be considered for said bonds in blocks of not less

than \$25,000. S. L. Doub is Chrmn. Board County Commrs.

Okla., Altus—(Sewer).—Election is to be held in near future to vote on \$15,000 of bonds. Address The Mayor.

Okla., Chickasha—(School).—\$35,000 of bonds are voted. O. Coffman is Mayor, and E. G. Reynolds, City Clerk.

Okla., Coalgate—(School).—\$34,000 of 5 per cent. 25-year \$1000 denomination bonds, maturing 1942, have been purchased at \$225 premium by W. A. Brook, Oklahoma City, Okla.

Okla., Fairview—(School).—Election is to be held Mch. 12 to vote on bonds. An issue of \$31,000 was purchased at \$1315 premium by Geo. R. Broadwell & Co., Oklahoma City. V. G. Jones is Mayor.

Okla., Frederick—(Light, Water, Sewer).—Election is to be held Mch. 20 to vote on \$100,000 of 6 per cent. bonds, maturing 1937. R. J. Edwards of Oklahoma City has purchased the bonds at 1.0127.

Okla., Frederick—(Paving).—Election is to be held Mch. 20 to vote on \$95,000 of bonds. J. O. Morrow is City Clerk.

Okla., Faxon—(Water, Light).—\$10,000 of 5 or 6 per cent. 25-year bonds are voted. Date for opening bids not yet decided. Address Town Board.

Okla., Perry—(Water).—\$22,000 of bonds have been purchased at \$400 premium by D. J. Donahue, Ponca City.

Okla., Sapulpa—(Fire Station).—\$20,000 of bonds recently voted are to be offered for sale now. Address The Mayor.

Okla., Tishomingo—(Road).—\$28,500 of 6 per cent. 1-25-year Garrett Township, Johnston County, bonds have been contracted for at 104.611 by the First National Bank, Tishomingo; \$140,000 of Harris Township contracted for by same parties. Elections to vote on the bonds will be held March 15. Address Commrs. Johnston County.

S. C., Anderson—(Street).—\$125,000 5 per cent. 30-year bonds, voted Feb. 26, were purchased at \$128.910 by Spitzer, Rorick & Co., Toledo, O.; \$125,000 of 6 per cent. 19-year street-paving certificates were purchased at \$11.85 on each \$1000 by the Hanchett Bond Co., Chicago. J. H. Godfrey is Mayor.

S. C., Anderson—(School).—Election is to be held April 3 to vote on \$80,000 of School Dist. bonds Anderson School Dist. No. 17. Address Board of Trustees.

S. C., Camden—(County Bonds).—Bids will be received until noon Mch. 21 for \$100,000 of 5 per cent. 25-year Kershaw County bonds, dated May 1, 1917. M. C. West is Supr. Kershaw County.

S. C., Gaffney—(Road).—Election is to be held March 13 to vote on \$225,000 Cherokee County bonds. Address County Commrs.

S. C., Laurens—(Road, School).—Election is to be held Mch. 27 to vote on \$300,000 of road and \$30,000 teachers' training school bonds, and the County Suprs. Laurens County will issue \$25,000 of fall bonds. Address County Commrs.

S. C., Chester—(Road).—Election is to be held in Chester County March 27 to vote on \$450,000 of bonds. Address County Commrs.

S. C., Chester—(Street).—Petitions are being circulated by the Chester Chamber of Commerce asking the City Council to call an election for issuing \$100,000 of 5 per cent. bonds. Address The Mayor.

S. C., Gaffney—(Refunding).—Election is to be held March 19 to vote on \$12,000 of 5 per cent. 20-40-year bonds. Address Mayor Little.

S. C., Newberry—(Refunding).—Bids will be received until noon Mch. 20 for \$30,000 of 4½ and 5 per cent. 20-year water and light refunding bonds. Denomination to suit purchaser. M. L. Spearman is Chrmn. Commrs. of Public Works. Further particulars will be given in the advertising columns.

S. C., Pelton—(School).—\$5000 of Pelton School Dist. 15-year bonds recently voted are being offered. Address D. R. Kneese.

S. C., Union—(Road).—Election is to be held March 20 to vote on \$125,000 of Union Township, Union County, bonds. Address County Commissioners.

Tenn., Benton—(School).—Bids will be received until noon Mch. 27 by S. L. Higdon, Chrmn. Board Commrs. Polk County, for \$30,000 of 5 per cent. 15-year bonds.

Tenn., Chattanooga—(Bridge, Funding School, Road).—Bids will be received until 11 A. M. Mch. 16 for \$550,000 Market Street bridge, \$100,000 funding school and \$80,000 road bonds; dated April 1, 1917; maturity April 1, 1947; denomination \$1000. Interest not exceeding 5 per cent. Will Cummings is Judge of Hamilton County.

Tenn., Chattanooga—(School).—The County Court has adopted a resolution requesting the Legislature to pass an act for a \$130,450 bond issue. Will Cummings is Judge of Hamilton County.

Tenn., Maryville—(School).—\$50,000 of 5 per cent. 10-30-year \$1000 denomination bonds, dated Mch. 15, 1917, were purchased Feb. 24 at \$52,043 by Cummings & Prudden, Toledo, O. Address Geo. D. Roberts.

Tenn., Mountain City—(Road).—\$200,000 of Johnson County bonds are voted. Address County Commrs.

Tenn., Nashville—(Municipal Improvements).—City Commrs. have authorized the issuing of bonds as follows, interest not exceeding 5 per cent.: Sewers, \$1,000,000; fire hall, \$55,000; cottage for nurses and improving city hospitals, \$55,000; Carnegie library, \$25,000; schools, \$225,000; light plant, \$55,000; gutter construction, \$25,000; police station, \$25,000; viaduct, \$230,000; street, \$180,000. Election will probably be held in June. Robert Ewing is Mayor and Paul W. Treanor Commr. of Finance.

Tex., Bay City—(Road).—Election is to be held March 24 to vote on bonds Mata-

gorda-Wadsworth Precinct, Matagorda County. Address County Commrs.

Tex., Brownwood—(School).—Election is to be held March 31 to vote on \$15,000 of bonds. Address The Mayor.

Tex., Cameron—(Road).—\$15,000 of bonds Road Dist. No. 9, Milam County, are to be issued. Address John Looney, Buckholts, Tex., Route 3.

Tex., Cleburne—(School).—\$250,000 of bonds are voted. Address Board of Education.

Tex., Dallas—(School).—Apr. 3 election is to be held to vote on \$500,000 of 4 per cent. bonds. Henry D. Lindsley is Mayor.

Tex., Giddings—(Road).—Election is to be held Mch. 20 to vote on \$150,000 of bonds Good Roads Dist. No. 1, Lee County. Address County Commrs.

Tex., Hearne—(School).—Election is to be held March 29 to vote on \$50,000 of bonds Hearne Independent School Dist. Address Board of Trustees.

Tex., Huntsville—(School).—Election is to be held April 7 to vote on \$25,000 of Bedias Dist., Walker County, bonds. Address County Commrs.

Tex., Lubbock—(School).—\$40,000 of bonds recently voted have been sold. K. Carter is Pres. School Board.

Tex., Paris—(Road).—Election is to be called in Lamar County in near future. It is reported, to vote on \$1,000,000 of bonds. Address County Commrs.

Tex., Plainview—(Street).—Election is to be held March 10 to vote on \$40,000 of 5 per cent. 10-40-year bonds. Address The Mayor.

Tex., Waco—(Fire Dept.).—Election is to be held Apr. 3 to vote on \$35,000 of bonds to motorize fire department. Address Mayor Dolins.

Va., Altavista—(Street, Water, Sewer).—\$16,000 of an authorized issue of \$35,000 of 5 per cent. 30-year \$500 denomination bonds, dated Oct. 1, 1916, and maturing Oct. 1, 1946, have been purchased at par and accrued interest by the First National Bank of Altavista.

Va., Denbigh—(Road).—At the April session, it is stated, the Board of Suprs. of Warwick County will take up the question of issuing bonds.

Va., Newport News—(School).—Election is to be held to vote on \$35,000 of bonds for George Wythe School. Address School Board.

Va., Norfolk—(Dock).—City Council is considering question of issuing \$600,000 of bonds for construction of public docks. Address The Mayor.

W. Va., Lewisburg—(Road).—\$103,000 of Fort Spring Dist., Greenbrier County, bonds have been purchased at par by Harris, Forbes & Co.

W. Va., Martinsburg—(Street, Bridge, etc.).—Ordinance is before the City Council authorizing an issue of \$210,000 of bonds for general improvements. Address The Mayor.

FINANCIAL NOTES

Galveston County, Tex., desires, according to official announcement in the advertising columns, to purchase a total of \$72,500 of its bonds that are now outstanding, and is inviting offers until 11 A. M. March 13. John M. Murch is County Auditor at Galveston.

W. W. Lanahan & Co., bankers, Baltimore, announce that Benjamin Dobson of Dobson & Co., New York City, has become associated with them as manager of their investment department, and that the business of Dobson & Co. has been absorbed and will be handled at Baltimore.

The Tennessee State Banking Dept. has issued its seventh bulletin, showing as of Jan. 6, 1917, that the total resources of the State banks of that Commonwealth were then \$131,333,019, including loans and discounts \$80,874,872. Total deposits were \$102,255,065. Savings and time deposits alone amounted to \$29,294,051.

The State Banking Department of Mississippi has issued statements showing the totals of condition of 281 State banks and 35 national banks in that State as of Dec. 27, 1916. The aggregate resources of all the State banks were \$97,369,571; increase as compared with Dec. 31, 1915, \$24,636,945. In the same period individual deposits increased from over \$36,600,000 to over \$49,800,000. Savings deposits and time deposits rose from over \$16,000,000 to over \$23,000,000, and loans and discounts correspondingly gained. Aggregate resources of all the national banks were \$35,091,157; individual deposits over \$15,700,000, and loans and discounts over \$19,000,000.

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OLD DOMINION LAND COMPANY
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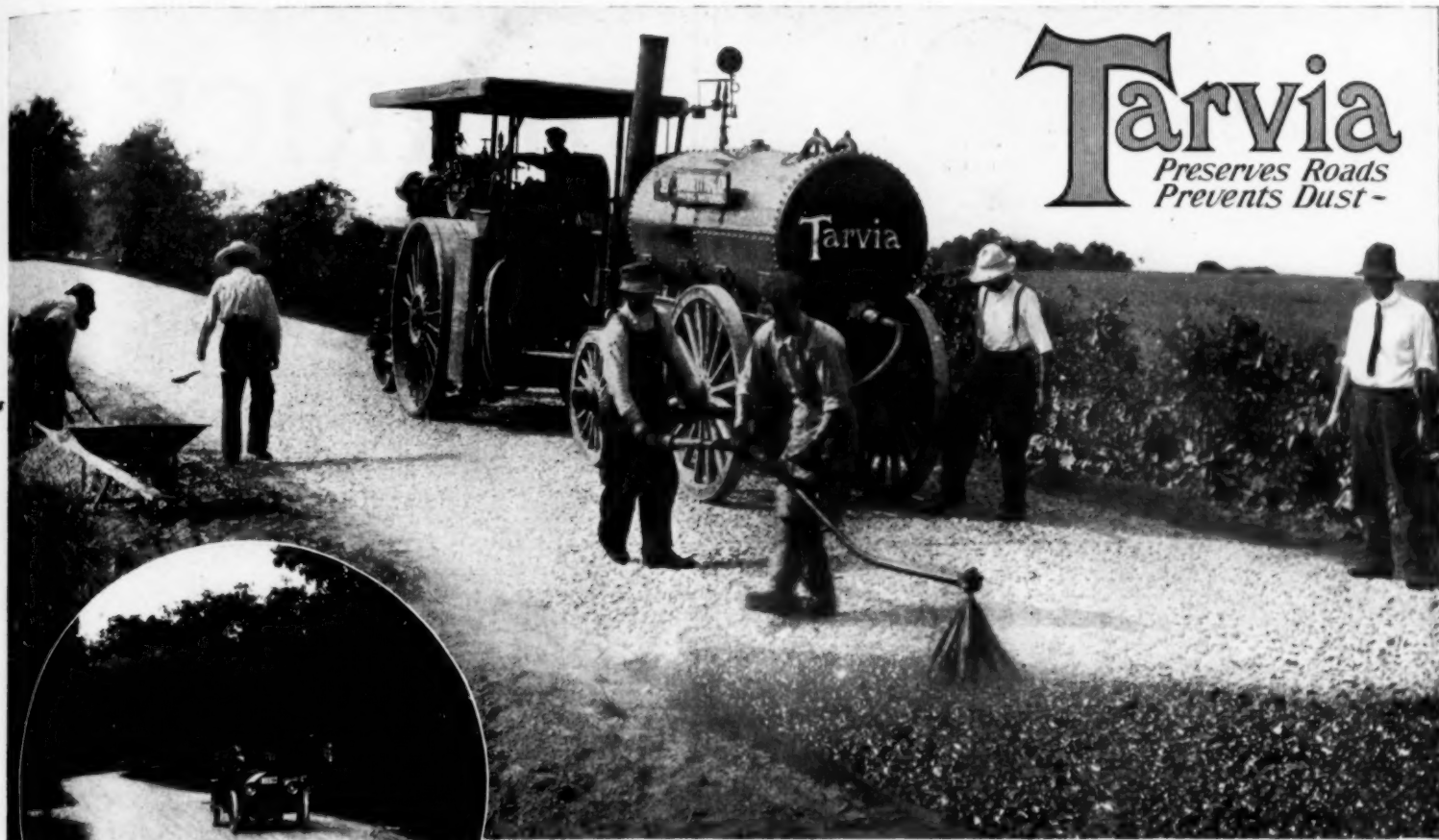
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is one of the only six women's colleges in the South honored by membership as a standard college in "The Association of Colleges and Preparatory Schools of the Southern States." Its B.A. degree is accepted by the highest grade Colleges and Universities, and admits, without further work, to candidacy for the M.A. degree. It has separate science, music and library buildings; dormitories limited to 190; gymnasium and infirmary; 42-acre campus, and 38 teachers and officers. It is 35 miles from the Blue Ridge Mountains, and has an ideal winter climate. It owes no debts, and has an endowment. It is accessible North, East, South and West by six lines of railway. If you wish a catalogue, address

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Tarvia
Preserves Roads
Prevents Dust -



The illustration shows "Tarvia-X" being applied under pressure on the wearing-course—at this step the road is about half constructed. The view in the circle is the finished road at Green Lake, Wis. Note that the speeding auto leaves no trail of dust.

Have You a Definite Good Roads Program?

MOST municipal engineers in the large centers have what they call a "Road Program;" that is, the plan for all the streets and roadways within their jurisdiction covering from three to five years or more in the future.

In the smaller cities and towns such a paving program is occasionally prepared by outside consulting experts.

They come in and make scientific studies of the traffic on various streets—the grades, the kind of materials that are available, etc.

Then they lay out a complete scheme calculated to keep the road department working for many years ahead towards a well-defined objective of a perfectly paved town.

More frequently, however, no program is followed and roads are built and maintained by rather loose and costly methods. Every town, no matter how small, ought to have a definite road program.

Every county ought also to have one.

Roads should not be built in a patch-work, haphazard fashion, for the only result of such a policy is stretches of good roads interspersed with stretches of bad roads.

As a chain is no stronger than its weakest link, so a road is only as passable as its poorest parts.

Therefore, alternating *good* and *bad* roads are a costly abomination to all who travel over them and all who pay taxes for their construction and maintenance.

Our Service Department has persuaded many towns to work out a systematic road policy, because we have been able to demonstrate that great sums of money can be saved by so doing.

A system of tarviated macadam—that is to say, macadam that has been bonded with Tarvia to preserve the surface and make it automobile-proof—is an almost indispensable part of every Good Roads Program today.

Tarvia roads are not only low in their first cost, but exceedingly low in maintenance cost.

Once a town or city adopts the policy of build-

ing Tarvia roads it rarely goes backward, but the mileage is increased from year to year.

The result of such a policy is a town where the roads are dustless and clean, the property values advancing, the road tax low and the taxpayers enthusiastic believers in and boosters of Tarvia.

There are several grades of Tarvia and a dozen methods of using the product.

We should be glad to mail you an illustrated booklet showing Tarvia roads all over the country that are giving the maximum of service and satisfaction at a minimum cost.

Special Service Department

This company has a corps of trained engineers and chemists who have given years of study to modern road problems.

The advice of these men may be had for the asking by anyone interested.

If you will write to the nearest office regarding road problems and conditions in your vicinity, the matter will have prompt attention.

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New York Chicago Philadelphia Boston St. Louis Cleveland Cincinnati Pittsburgh Detroit
Birmingham Kansas City Minneapolis Nashville Salt Lake City Seattle Peoria
THE PATERSON MFG. CO., Limited: Montreal Toronto Winnipeg Vancouver
St. John, N. B. Halifax, N. S. Sydney, N. S.

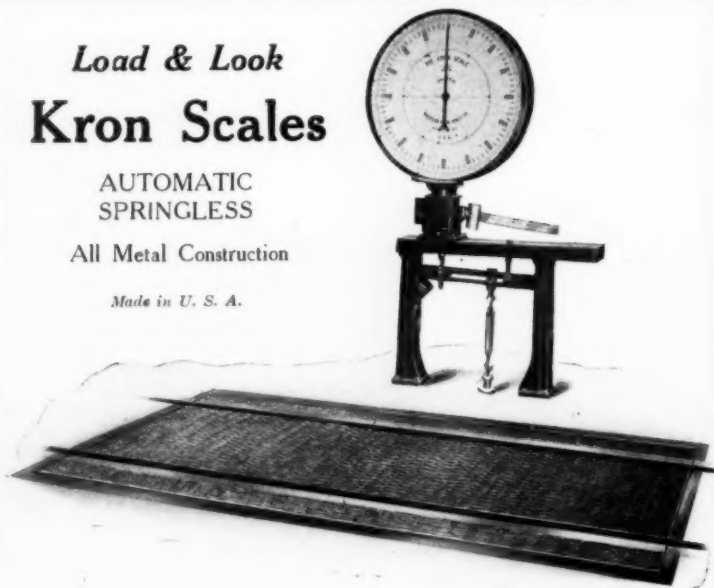


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All Metal Construction

Made in U. S. A.



A type of Kron used by a large Shipbuilding Corporation, being one of several scales used in the weighing of armor-plate. The dial has a capacity of Sixteen Thousand Pounds and the Tare Beam 7,500 lbs. This tare beam takes care of the weight of the car which carries the armor-plate from the department to the place where the scale is located, and the weight is taken as the car passes over the platform.

Why not make your weighing department **100% Efficient** by installing Kron Scales. They are proving a great time and labor saver in hundreds of industrial plants of every description and are saving thousands of dollars yearly to the users. Made in types to meet all requirements. Any capacity.

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- One Buckeye Engine Co. 500 H. P. Engine.
One General Electric Co. A. C. Generator, No. 518475, type ATB, 48-375-150, form E. K. W. 300, volts 2300, amperes 94.5, speed 150.
- One General Electric Co. D. C. Generator, No. 375731, wound compound, type CVC, 116, form A, 1019, K. W. 20, amperes 160, speed 1200. Exciter volt, no load, 80; full load, 80. Generator volts, no load, 125; full load, 125.
- One Buckeye Engine Co. Cross-Compound Engine, 1050 H. P.
- One Westinghouse Elec. & Mfg. Co. Generator, A. N., 850 K. V. A., 2400 volts, 204 amperes per terminal, 3-phase, 60 cycles, 120 R. P. M., serial No. 1167160.
- One Westinghouse Elec. & Mfg. Co. D. C. Generator, No. 150, type SK, compound wound, 35 K. W., 125 volts, 280 amperes, 775 R. P. M., style No. 151536, field serial No. 1168132.
- Five Chandler & Taylor Fire Tube Boilers, 150 H. P. capacity, 150 lbs. pressure.
- Two Union Steam Pump Co. Deep Well Pumps.

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In Virginia, K. & J. make, 2-way standard gauge.

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3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2", 3", 4", 6", 8", 10", 12", 14", 16", 18", 20", 24", 28", 32", 36", 40", 44", 48", 52", 56", 60", 64", 68", 72", 76", 80", 84", 88", 92", 96", 100". New material, large sizes, Sheared Plates, about 325 tons. Send for stock list and prices.

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Lot of Big Derricks in
First-Class Condition?

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Derrick Company's heavy fittings

An unusually low price to any buyer
who will buy all or most of them

GUY DERRICKS

- 1 Mast 85 feet, 18" diam., boom 83 feet, 22" diam., 1800 feet guy rope.
- 1 Mast 88 feet, 16x16", boom 81 feet, 21" diam., 1800 feet guy rope.
- 1 Mast 78 feet, 16x16", boom 72 feet, 16x16", 1500 feet guy rope.
- 1 Mast 70 feet, 14x14", boom 65 feet, 18x18", 1500 feet guy rope.
- 1 Mast 66 feet, 16x16", boom 65 feet, 18x18", 1500 feet guy rope.
- 1 Mast 60 feet, 12x12", boom 50 feet, 12x12", 1500 feet guy rope.

STIFF LEG DERRICKS

- 1 Mast 37 feet, 18" diam., boom 60 feet, 12x14", legs 57' long, 16" diam.

EXTRAS

- 1 GUY DERRICK MAST 84 feet long, 20" diam.
- 1 STIFF-LEG DERRICK MAST, 32 feet long, 20" diam.

STEEL AIR RECEIVER, 54" diam. by 22' 3" long.
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SMITH Concrete MIXER, No. 5, 1-yd. batch, with vertical engine.
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Standard gauge DUMP CARS, 4 of 6 cu. yd. capacity.
Standard gauge FLAT CARS, 4 of 60,000-lb. capacity, 34' long.
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One NAGLE Horizontal center-crank ENGINE, 12x16", 60 H. P., with Gardner governor and all fittings, complete.
STEEL RAILS—1500' 60-lb. RELAYERS, with splices.
One Chandler & Taylor Horizontal ENGINE, cylinder 16x20", 125 H. P., with Gardner governor and all fittings, complete.
One LAMBERT HOISTING ENGINE, 7x10" double cylinder, double drum, with Duke Swinging Engine.
One LAMBERT HOISTING ENGINE, 7x10", double cylinder, double drum, with swinging gear.
One LIDGERWOOD HOISTING ENGINE, 7x10" double cylinder, double drum, with swinging gear.
One Orange Peel BUCKET, HAYWARD, 3/4 cu. yd., four-leaf.
LACKAWANNA STEEL SHEET PILING, 35 lbs. per square foot, one corner piece 28' long, 12 pieces straight web 22' long.
Two PUMPS, WORTHINGTON duplex, 10x6x10", inside packed.
One BLAKE duplex PUMP, 10x6x10".
One BLAKE duplex PUMP, 7 1/2 x 5 x 6".
WROUGHT PIPE—1500' three-inch, 18 to 22' lengths, good threads and couplings.
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SUPERIOR CRUSHING ROLLS (built by Power & Mining Machinery Company), 36" diam. by 14" face, pulleys 81" diam. by 11" face and 42" diam. by 11" face. Good condition.
VULCAN standard gauge 11x16" 20-ton four-driver saddle-tank LOCOMOTIVE, automatic couplers. Will be sold after all of above plant is disposed of.

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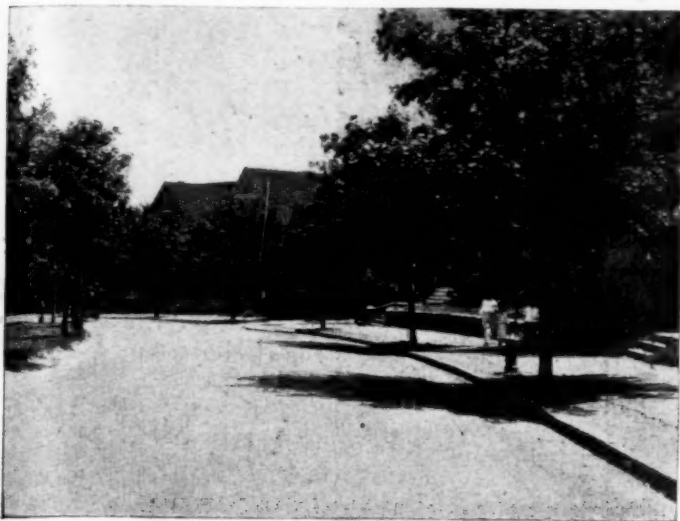
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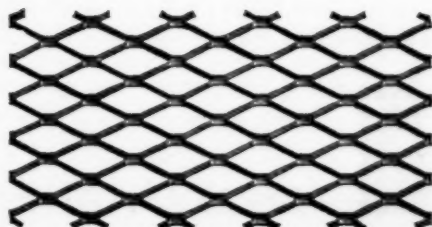
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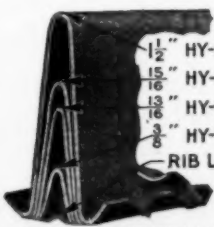
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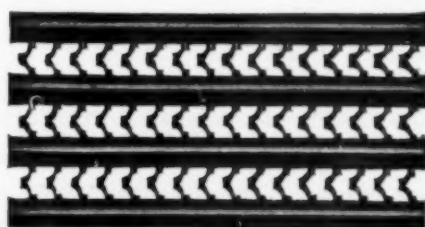
Channels without prongs, 3/4, 1, 1 1/2, 2 inches.



Detroit Diamond Lath in four gauges.



IT'S THE STRENGTH OF THE RIBS THAT COUNTS



Beaded Plate Rib Lath permits two-coat work instead of three.



Kahn pressed steel channel studs, 3, 4, 5, 6 inches; also 2 inches without turned flange.



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of Power*

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Hose · Valves*

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They know that those stitched belts stretched exasperatingly—that their pulley contact was poor and their slippage extravagantly wasteful.

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But our standard Blue Streak Belts are *not* stitched.

They *are* constructed with a special friction surface. They *are* impregnated even to the very fiber of their special-weave duck with high-grade "friction."

The enormous pressure used in impregnation and the high-grade "friction" weld the plies indissolubly.

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CHAIN LINK WOVEN
STEEL
PROPERTY PROTECTION FENCE

A Wall of Woven Steel which can not be pulled down, broken through or climbed over

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TRADE LITERATURE

(Continued from Page 72.)

Southern Sales Agent for Dyestuffs, Etc.

The Parsons-Barr Company, 113 Latta Arcade, Charlotte, N. C., which was recently organized to sell dyestuffs, chemicals, starches, dextrines, gums, sizing compounds, etc., has been appointed exclusive Southern sales agent of the Federal Dyestuff & Chemical Corporation of Kingsport, Tenn., for all the territory south of Baltimore and Cincinnati. William A. Parsons, its president, was formerly with the Standard Oil Co. in Cuba and brings to it a business experience that will be of great value in his new line of effort. John M. Barr is a practical dyestuff man, is well known to the trade, having formerly been connected with the Southern Dyestuff & Chemical Co. of Charlotte.

"Standard" Concrete Mixers.

The "Standard" concrete mixer, which is manufactured by the Standard Scale & Supply Co. of Pittsburgh, is graphically described and appropriately illustrated in Catalogue Y-159 of the company, which is handsomely printed and skillfully arranged for the reader's convenience. The different patterns of this invention are shown, one page being devoted to each type, the reading matter accompanying the pictures being interesting and adequate. Other illustrations display the Standard mixers at work on various kinds of contracting jobs. It is a book which will amply repay the reader for the time given to its perusal. Copies will be mailed to anyone interested.

Stucco and Plaster Work Investigated.

The Bureau of Standards, Department of Commerce, Washington, D. C., has issued another of its technologic papers, No. 70,

which relates to "Durability of Stucco and Plaster Construction." It is a report of progress in an investigation of stucco and plaster which was undertaken five years ago by this Bureau in co-operation with the Associated Metal Lath Manufacturers. In 1915 a test building 300 feet long was erected, having 56 panels representing the common types of stucco construction, including a variety of mixtures on metal lath, wood lath, hollow tile, brick, concrete block, plaster board, gypsum block and concrete bases. Six months after the building was finished an examination showed that a number of the panels were in poor condition. About 40 were rated as satisfactory; the rest were in various stages of deterioration. The paper contains suggestive information, but it is stated that recommendations are deferred until further service test results are known. A copy may be obtained by addressing a request to the Bureau of Standards.

Clay Pipe and Kindred Products.

A copy of the "Clay Pipe Book" has been received from the Macon Sewer Pipe Works of Macon, Ga., which manufactures vitrified salt glazed sanitary sewer pipe, vitrified culvert pipe, segment blocks for large culverts and sewers, grease traps, farm drain tile, chimney pipe, "Adj. Cap" septic tanks, fire brick, fire clay, fire clay lining, vitrified wall coping, flue chimneys, meter boxes, hollow fireproof building tile, etc. The company will be glad to mail the book, which is published by the International Clay Products Bureau, Kansas City, to anyone who might be interested and it is observed that "When all the people of the South curb their wells with vitrified glazed pipe and install septic tanks at their country homes, clean up their premises, drain the low places and put everything in a good sanitary condition they will have taken a big step forward." It is also related that the installation of a sewage system was exceedingly effective in practically eliminating pellagra in a mill community where it was once widespread. The value of glazed pipe for well casing is likewise dwelt upon.

Accounting for Industrial Plants.

"Unified Accounting Methods for Industrial Plants" is a new book written by Clinton E. Woods, author of "Woods' Reports," "Practical Cost Accounting," "Organizing a Factory," etc., which is published by the Ronald Press Co., 20 Vesey St., New York. Mr. Woods, who is advisory engineer of the Remington Arms-Union Metallic Cart-ridge Co., has written this volume after an experience of twenty years, it is stated, with concerns employing from half a dozen to twenty thousand men. He says: "The unified method of accounting I have presented here proposes and accomplishes the furnishing of an accurate instrument for measuring results. It is in the form of a detailed accounting system fitted to every element in a business, governed in turn by a set of controlling accounts no more expensive to install and operate than the fragmentary systems used in most factories today, but with benefits a hundred-fold more, as any manufacturer who will study them can understand for himself." The price of the book is \$5 postpaid. It is finely printed and is also handsomely bound in cloth with leather back and corners.

Directory of Exporters.

A copy of the fifth edition of the Export Trade Directory (1917) has been received from the publishers, the American Exporter, 17 Battery Place, New York. This valuable book keeps pace with the tremendous increase of foreign business of the United States; it is enlarged 50 per cent., having 536 pages as compared with 369 pages of the next previous edition, and now includes more than 2000 firms. As the announcement of issue says: "Not only is the directory of export merchants, manufacturing agents, foreign exchange bankers, foreign freight forwarders, steamship lines, etc., made complete and up to date, but the means of approach to this field by manufacturers and others desirous of increasing their export business has also been greatly facilitated by selected classified lists of export houses according to goods shipped and markets cultivated, by the new feature of trade ratings of important houses, and by detailed and accurate information concerning the firms included in the directory. Specifications of shipping routes to foreign markets for easy reference, locations of American consuls abroad and foreign consuls in the United States, etc., aid in handling foreign business direct, as the other sections of the directory aid in transacting and developing it with export houses in this country."

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TIN ORE FOR SALE—Mineral interest in 50 acres that assays from 1 to 10 per cent. cassiterite. Price \$10,000. Also undeveloped manganese and gold property. O. R. Rudisill, Greenwood, S. C.

FOR SALE—Fine water-power, including forty acres of land; well suited for textile plant. Address J. M. Peterson, Spruce Pine, N. C.

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GRAPHITE FOR SALE—300 million tons 4% graphite ore, 900 acres, 3 miles R. R.; ample water and ideal plant sites; can subdivide. Price \$50,000. Roland G. Spearman, Talladega, Ala.

GRANITE QUARRY
GRANITE QUARRY NEAR MACON, GA. Will sell or lease right to quarry 20 acres; no bottom to it; on main line Southern Railway. A bargain. Chatham Real Estate & Imp. Co., Savannah, Ga.

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OOLITIC LIMESTONE—For sale, 40 acres, almost solid, highest quality, 1 mile from R. R. Samples sent on request. Wm. Maloney, Owner, 215 S. 12th St., Gadsden, Ala.

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Cheap to Close an Estate.
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FOR SALE—65,000 acres timber and coal lands in Tennessee, on railway. Sacrifice price, \$2.50 per acre. Will accept one-half in exchange property. Fugers Realty Company, Columbia, Tenn.

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TIMBER LAND
600 ACRES pine timber, 3 to 5 miles of Culpeper, 2 1/2 miles macadamized, Southern Ry., suitable for staves or pulp. \$6 per acre. Catalogue free. B. F. Perrow, Remington, Va.

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Rate 25 cents per line per insertion. Minimum space accepted, four lines. In estimating the cost, allow seven words of ordinary length to a line. When the advertisement contains a number of long words, proper allowance should be made. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year as follows: 100 lines, 23c. per line; 300 lines, 21c. per line; 500 lines or more, 20c. per line.

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WANTED—Hardwood scraps or seconds, beech, maple, hickory or birch. Wanted in car lots finished to our drawings, furnished upon request. Boards 1 1/2"x8"x45" finished and ends beveled. Boards 1 1/2"x8"x30" finished and ends beveled. Boards 1 1/2"x20"x36" finished; made up of two or three pieces lengthwise. Howe Chain Company, Muskegon, Michigan.

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FOR SALE—About three hundred and seventy-five million feet of the highest grade and quality of virgin long-leaf yellow pine. For particulars address H. H. Wefel, Jr., Mobile, Alabama.

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We are prepared to furnish desirable farm lands, undeveloped and developed, and stocked, also hardwood and pine timber and cut-over lands, in any size tract wanted, in Ala., Miss. and La. These lands are exceptionally cheap and offer an attractive opportunity for investment. We also have some large farms to trade for city property. We are anxious to get in touch with people interested in these classes of properties and solicit correspondence. Bailey-Jones Real Estate & Ins. Co., Birmingham, Ala.

4000 ACRES, half timber and half cut-over land, for sale, preferably as a whole or in tracts of not less than 1000 acres each; property joins the town of Surrency, Appling county, Ga., on Southern Railway main line; fine stand of both pine and cypress timber; ideal location for stock farm or combination mill and colony farming. Land in vicinity noted for its record production of staple crops. For sale by owner, attractive price and terms, especially if bought as a whole. Wm. Hurd Hilgier, Atlanta, Ga.

CAPITALISTS, ATTENTION—7100 acres, Pender County, Eastern North Carolina; 7 miles from railroad; will cut 10,000,000 feet pine and cypress timber, mill size; top soil sandy loam, clay sub-soil; 1/4 tract natural drainage. Liberal terms. Title guaranteed. Write for details and price. E. B. Stevens, Southport, N. C.

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NOTICE—Good farms for sale, both large and small, at a bargain, in Wilcox Co., Ala. Also 4000 acres of cut-over lands at \$6 per acre. Well located. J. A. McClurkin, Camden, Ala.

ARKANSAS

LOOK! LOOK!—640 acres fine delta land in Chicot county; 10 miles from good town; no improvements; timber worth \$4000; price \$5000; one-third cash; balance at 6 per cent. Act quick if you want it. Cashion & Grubbs, Eudora, Ark.

CUBA

SOME FINE GROVES and small plantations, 3 with houses ready for occupancy; 4000 acres of property from 2 1/2 acres for \$25 up to millions. Hartley-Hellyer, Balto., Md.

FLORIDA

FREE, "THE WINTER GARDEN OF AMERICA," to Fruit Growers, Truckers, General Farmers, Cattle, Hog and Poultry Raisers. Folks interested in the great Indian River Section of Florida, write Indian River Farms Company, Suite O, 609 Putnam Bldg., Davenport, Iowa.

REAL ESTATE BARGAINS.

For high-grade orange groves, winter homes, city property, timber tracts, Florida cattle ranches and other properties of all kinds consult
The Waring Realty Co., Orlando, Fla.

LAST HAY FARM—45 acres ready for last cutting. City limits. Bordering two beautiful lakes. Pretty building sites, 1/4 mile Dixie Highway, Coast Line Railroad. Very cheap. M. J. Sligh, Lady Lake, Fla.

FOR A SAFE and permanent investment Florida lands and values should interest you. Manatee County is the best location, and is destined to become one of the most progressive settlements in the State and a very profitable investment. Florida farms in Manatee County are below frost belt; have rich soil, with 365 producing days. Easy terms. J. Henry Strohmeier, Maryland Casualty Tower Building, Baltimore, Md., and Sarasota, Florida.

FOR SALE—The best bargain in the State of Florida. 20 acres on Lake Mariana, for \$75 per acre, net cash. Location two miles from Winter Haven, two miles from Auburndale, and one mile from Florence Villa Hotel. Deed registered Feb. 22, 1915. Deed book 139, page 117. Taxes paid for 1916. Surrounding land is now selling for \$100 per acre, not as good as the 20 acres I am offering for \$75. I paid \$1700 for the 20 acres less than two years ago, but I need the money and must sell even at a sacrifice. My 20 acres is surrounded by groves of orange trees on all sides. Address J. M. A., 1206 Florida Ave., Tampa, Fla.

OWNERS 20,000 ACRES—General farming and stock raising, corn, cotton, trucking, chickens and pigeons; one acre to one thousand; one to twenty miles of Jacksonville. All land dark sandy loam soil; no waste land. 25 per cent cash; 6 per cent on long time; \$6 to \$20 per acre. S. J. Melson Co., 435 W. Adams St., Jacksonville, Fla.

FLORIDA

FOR SALE. 6500 ACRES IN FLORIDA. WHOLESALE PRICE. WILL NOT RETAIL. Located on the East Coast, in Volusia County; price \$6.50 per acre; \$1 per acre down, balance \$1 per acre per acre; 8 miles west of New Smyrna, Fla.; on the Orange C. & N. Branch of the Florida East Coast R. R.; Indian Springs Station is only 1/4 of a mile from it; 2500 acres are "prairie land." Soil an elevation of about 22 1/2 to 41 feet above the tide water; top soil is a black sandy loam, underlaid with clay. Would make an ideal stock range. There are forty families farming in the adjoining sections; some have raised 45 to 50 bushels of corn to the acre, in barrels of Irish potatoes, and all kinds of garden truck, such as lettuce, beans, peas, Bermuda onions, besides good crops of rice, oats and grasses for feed. Title good. Owned in fee-simple, without incumbrance. Other information will be furnished upon request by R. C. Howe, 747 Hartford Bldg., Chicago, Ill.

FLORIDA—Do you intend visiting the land of health and sunshine this winter? If so, write M. J. Hoening, Prop. Hotel Palm, West Palm Beach, Fla., for instructive booklet.

GEORGIA

2700 ACRES of fine dairy or cattle land 10 miles from Savannah can be bought at \$10 per acre. A bargain. Skeffington & White, Savannah, Ga.

KENTUCKY

WEST KENTUCKY FARM LANDS. 2500 acres fine first and second bottom land; 1000 acres under cultivation. Good residence and tenant-houses, large barns and silos. Thriving store on the place. Fine corn, wheat, tobacco and hay land. Lays well and can be divided into small farms very profitably. Fifteen miles from Paducah on a fine gravel pike. Price \$60 per acre; easy terms. Borders 2 miles on Ohio River; fine landing.

311 acres, 5 miles from Paducah on gravel pike. Well improved; new six (6) room house; two big barns. Bargain at \$50 per acre.

525 acres fine Ballard County lands; 20 acres in cultivation. For quick sale at \$20 per acre. Randle Smith & Co., Paducah, Ky.

TEXAS

MONEY can't be used to better advantage now than investing it in South Texas land. There is no speculation in it. You will know so a year from now. I give you here a few good buys: 2933 acres of fine agricultural land, located in a proven oil district; price \$10 per acre; terms. 1000 acres improved stock farm, between Austin and San Antonio; 200 acres tillable land; one mile river front; across the river is constructed a solid dam of rock masonry, giving 35 to 40 horsepower, which operates a large turbine wheel, a gin, press and grist mill, and sufficient water to irrigate at least 50 or 75 acres; a large lake is created by the dam, furnishing good fishing. The community is a good one. Nature has put its charm to this spot, and could be developed and made a real paradise for man on earth. The price placed on this desirable property—only \$16,500—is very low. This is the biggest bargain in Texas. Write me your wishes; state in your first letter what size tract you want, agricultural or ranch land; what capital you have to invest. I have improved farms, small and large, colonization tracts from 2000 to 25,000 acres, ranches of 5000 to 30,000 acres, at prices from \$4.50 to \$20 per acre. Suitable terms given. Act now. Write B. P. Hintze, 214 East 6th Street, Austin, Texas.

FOR SALE—A 3020-acre tract of exceptionally fine, very fertile, improved, gently rolling, almost level land; all well watered and in cultivation; no waste at all; located near Bay City, Matagorda County, Texas; excellent, healthful climate; year-round farming; cotton, corn, rice, potatoes, garden products very successfully raised; marketing facilities good; best proposition yet for farming colonization. Price till March 20, \$3 per acre; adjoining, not as good nor as well improved, is selling at \$20 per acre. Act quickly or opportunity is lost. Dr. S. G. Hastings, 216 Porter St., San Antonio, Texas.

C. H. MARTIN, the Texas land man, Jacksonville, Fla., sells and exchanges property from vacant lots to large ranches.

VIRGINIA

SPLENDID 400-ACRE Virginia farm; beautiful 10-room dwelling in large, shady lawn. Convenient to town, on public road. Will exchange for Chicago property. Pollard & Bagby, Inc., Richmond, Va.

SEE photo and read description of "Old Fort Lewis" in this issue of Manufacturers Record on page 92, and write for full particulars. Address Spindle & Craig, Roanoke, Va.

DAIRY, CROP AND TRUCK FARMS. SUBURBAN AND COUNTRY RESIDENCES. Good roads, mild climate, good labor conditions, desirable neighbors. Write us about the kind of place, large or small, you might sometime like to live on. Slaymaker-Schneider Corp., No. 612 King St., Alexandria, Va.

2700-ACRE FARM on James River, Va.; deep-water facilities; 1700 acres fine timber; 1000 acres high state of cultivation; well equipped; new barns, etc.; splendid rich man's estate. Apply for price, Green & Redd, Richmond, Va.

FRUIT, FARM AND TRUCK LANDS

VIRGINIA

PINE COLONIAL RESIDENCE in well-shaded yard; 1 mile live village and depot; 80 acres nearly level productive land, 50 cleared; usual outbuildings; would make beautiful country estate; \$6000. A. H. Kirkland, Owner, Concord Depot, Va.

FOR SALE—Bluegrass grain farms; fruits and cheap poultry farm. Prices and terms to suit buyer. Don't miss this chance. Write for price list giving full information as to your wants. John R. Conner, Stephens City, Frederick County, Va.

A 1100-ACRE FARM INVESTMENT. Located in the Piedmont section of Virginia; 400 acres river bottom; 350 acres of oak, hickory and pine. The upland is good and lies well. Eastern markets promptly reached. Local markets excellent. This farm and its price should appeal to you if you ever expect to invest in farm lands. Let us send you full description. Robeson-Hall Land Co., Morristown, Tenn.

STAUNTON RIVER FARM—520 acres, including river bottoms and upland; about 300 acres under cultivation; corn, wheat, hay, shipping tobacco. Land in improved condition. Place well watered, partly fenced. Some timber—pine, oak, poplar. Ample firewood and good land uncleared. Three tenant-houses, new stable, tobacco barns, corn crib, granary. Team and tools already on place at reasonable figure. Inquiry and inspection invited. Price \$25 per acre. For terms and further information apply to G. C. Stone, Hart, Pittsylvania Co., Va.

SHENANDOAH VALLEY OF VIRGINIA. Where Blue Grass and Alfalfa Grow. In the heart of the Apple Belt. Delightful climate. Fertile Soil. Write John M. Londeree, Staunton, Va.

STAUNTON RIVER FARM—520 acres, including river bottoms and upland; about 300 acres under cultivation; corn, wheat, hay, shipping tobacco. Land in improved condition. Place well watered, partly fenced. Some timber—pine, oak, poplar. Ample firewood and good land uncleared. Three tenant-houses, new stable, tobacco barns, corn crib, granary. Team and tools already on place at reasonable figure. Inquiry and inspection invited. Price \$25 per acre. For terms and further information apply to G. C. Stone, Hart, Pittsylvania Co., Va.

ATTORNEYS

RAYMOND M. HUDSON, Attorney, Washington, D. C. Practice before U. S. Supreme Court, U. S. Court of Claims, D. C. Court of Appeals, D. C. Supreme Court, Va. and Md. Courts, Executive Departments, Congressional Committees, Federal Reserve Board, Federal Trade Commission, Interstate Commerce Commission. Cable "Rayhud."

FINANCIAL

A SAFE INVESTMENT. Steady and large dividends. We offer 7% preferred and guaranteed stock, which also shares in all profits of the company. This means 10% to 20% now, and much more later. We grow the Albemarle Pippin, the finest apple in the world, made famous by Queen Victoria. It requires a combination of soil and elevation, which is very limited. It cannot, therefore, be overdone. We have developed the selling end of the business, and ship boxed Albemarle Pippins to satisfied customers in thirty odd States and abroad. We need capital. It will pay you to write us for particulars. Pippin Co., Charlottesville, Va.

WANT TO BORROW—About \$10,000 on first mortgage on several hundred acres of high-class farm lands to extend large development enterprise. Will pay 6% and one-way fare to investigate proposition. Best of bank reference on application. Florida-Michigan Highlands Co., Auburndale, Fla.

FOR SALE—30 shares of the capital stock of the Forrest City Box Company at par value if taken at once. H. M. Cooley, Jonesboro, Ark.

INCORPORATING COMPANIES

CORPORATIONS ORGANIZED under the broad, liberal and substantial laws of Delaware. Minimum original and annual expense. Estimates cheerfully furnished. Write for our revised DIGEST of the law. CORPORATION COMPANY OF DELAWARE, Equitable Building, Wilmington, Del.

BUSINESS OPPORTUNITIES

VIRGINIA factory building. Owners will take stock in establishing business in their plant on main line two railways with sidings; large 2-story building, 3 acres ground, office building, stable and 14 building lots; value \$50,000. Va. Land Bureau, Inc., Roanoke, Va.

FOUR-WAY PRESS MACHINE for development. Cotton bale or any heavy press work adaptable. Built successfully in unlimited form for making steel castings. Valuable as a metal-working and steel-handling press. Would be pleased to interest gentlemen with capital or manufacturers. Address No. 264, care Manufacturers Record.

BUSINESS OPPORTUNITIES

RICHMOND, VA.

Read Babson's statistical report of Richmond. Read Richard L. Rowe's "Richmond is first in its population class." Richmond gained \$34,746,000 in value of factory products from 1905 to 1915, or an average rate of 12 1/2% annually for entire decade. Richmond shows a greater increase by 50% to 75% than a number of cities in the North, East, West and South of much larger population. To attain to the position noted above is indisputable evidence that her facilities are superior and her resources ample. Richmond has some of the largest enterprises of the kind in the United States. Richmond is the home of the Federal Reserve Bank for the Fifth District. Richmond is virtually the Southern end of the great Pennsylvania Railroad. From here to the South the Southern Railway, Atlantic Coast Line and Seaboard Air Line radiate. The Chesapeake & Ohio Railroad, operating with the "Big 4," connects the great West with Richmond and the Chesapeake Bay. The Norfolk & Western Railway, only 20 miles distant, through connection with Atlantic Coast Line, Seaboard Air Line and Southern railways, compete for the Western and Eastern business of Richmond. Richmond has deep-water transportation to the sea, about one hundred miles, by way of James River. This gives Richmond the great advantage of "break" in freight rates.

To capitalists and others we extend an invitation to visit Richmond and let us show them some of the possibilities for profitable investment.

Our Real Estate Department is in position to advise you about desirable opportunities in the purchase of property promising enhancement in values, to advise as to character of buildings and locations, to produce present and increasing returns.

Richmond Trust and Savings Company (Capital One Million Dollars). Real Estate Dept., O. A. Hawkins, Manager, 7th and Main Sts., Richmond, Va.

WE BELIEVE there is a profitable opening for manufacturer of artificial flowers in Richmond, and we can supply a suitable building in desirable location at low rent. Richmond Trust & Savings Co., Real Estate Department, Richmond, Va.

LAND OWNERS, executors, administrators, managers of estates, have you land, residence lots or farms for sale? We have a trained organization specializing in subdividing and selling land at auction. By our up-to-date methods we turn real estate into cash, or interest-bearing securities quickly and successfully, and at the same time meet the need and demand of the small buyer. We sell where the usual methods fail. Everything sold strictly on commission. Write us. Our representative will inspect your property. National Real Estate and Auction Co., 1024 Woodward Bldg., Washington, D. C.

ON ACCOUNT OF HEALTH will sell an exclusive business proposition that will pay enormous profits; no competition; patented article of a changeable advertising nature. Unless you can command at least \$10,000, don't answer. Address No. 3052, care Manufacturers Record, Balto., Md.

WE WANT to get in touch with responsible real estate, insurance, bankers, brokers, financial and investment agents who will aid us in handling our clients quickly and intelligently in your section. Write us your facilities for handling business. Help us in perfecting our service system and you help yourself. Roger A. Jennings & Co., Financial and Investment Agents, Greensboro, N. C.

WANTED—Partner with from six to eight thousand to invest with like amount in a lucrative manufacturing business. For particulars address Box 304, Anniston, Ala.

DISTRIBUTORS

We are prepared to act as distributors for a few reliable concerns. We have the very best of railroad facilities for this section. We have a large warehouse for general storage. Southern Bonded Storage Co., Box 647, Charlotte, N. C.

WHEN interested in buying or selling real attractive investment propositions, write Investment Service Dept., Roger A. Jennings & Co., Greensboro, N. C.

HAVE YOU CASH to put in safe investment in Florida netting 10 per cent. and better? Address No. 3009, Manufacturers Record, Balto., Md.

A VALUABLE parquet floor factory wants a live, thoroughly experienced lumber man to take charge and make investment on a bona fide proposition. Output of factory is guaranteed. Location of factory is one of the finest in the Southwest. Address No. 3041, care Manufacturers Record, Balto., Md.

USE our Investment Service Dept. for handling your business in the Southern and Eastern States. Reliable personal representation affords you confidential and efficient service. Roger A. Jennings & Co., Financial and Investment Agts., Greensboro, N. C.

ELKTON HOTEL FOR SALE, ELKTON, VA. SUMMER RESORT. On Norfolk & Western Railway, 100 miles south of Hagerstown, 4 1/2 hours from Washington. Elk lithia water. Suitable for sanatorium. 75 rooms. Fully equipped and in good repair. 10 acres. \$20,000. One-third cost to close partnership. Address D. C. Graham, Harrisonburg, Va.

SOME ENTERPRISING TOWN by prompt action can secure an unusually desirable manufacturing establishment. Unlimited market. Used everywhere. Liberal profits. Inexpensive equipment. Almost any wood-working plant can manufacture the article, which is a new invention and patented window screen. Waste wood can be largely used. Address Owners, Lindbeck & Murray, 172 N. Water St., Rochester, N. Y.

BUSINESS OPPORTUNITIES

ENGINEERING and surveying business for sale. Business increasing and is ideal Virginia location for health and business. Price \$500 cash. Address No. 3055, care Manufacturers Record, Balto., Md.

WANTED—Party to furnish \$5000 or \$10,000 to finance a contracting business. U. S. Post-office work; have had plenty of experience; only need capital; young man preferred. Address No. 3057, care Manufacturers Record.

WILL PURCHASE desirable electric-light or gas property having established earnings, or finance consolidation of a group of such properties. Advise concerning present annual gross earnings and franchise conditions. Treasurer, P. O. Box 1136, Providence, R. I.

WANTED—President and treasurer in an established profitable woodworking factory desire to dispose of half of authorized capital stock of \$50,000, heretofore unsold, in order to meet demands of present business and increase production. Dr. Walter J. Quick, Box 864, Roanoke, Va.

BUILDINGS—STEEL PORTABLE

"PRUDENTIAL" STEEL BUILDINGS for all purposes; portable one-story construction; workshops, toolhouses, storage, garages, bunkhouses, etc. Write for Catalog A. C. D. Prudden Company, Baltimore, Md.

COLLEGES AND SCHOOLS

EXECUTIVES ARE IN DEMAND IN MODERN BUSINESS.—Many of the largest business organizations in the U. S. have adopted Pace Standardized Courses to meet their growing need for competent executives. To the ambitious man who is looking for advancement in modern business the opportunity presented by this nation-wide educational movement is unparalleled. You can take advantage of the same courses by direct enrollment. Instruction by mail—no interference with present employment. Free Bulletin (32 pp.) gives complete information. Ask for Bulletin M-5, Pace & Pace, Hudson Terminal, 30 Church St., New York.

PATENTS FOR SALE

FOR SALE CHEAP—Patent hot pan lifter. Will make a good seller. Costs about 6 cents; sells for 25 cents. Jos. H. Wolford, Clifton Sta., Va.

PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER AND PATENT LAWYER, 734 Eighth St. N. W., Washington, D. C. Graduate Engineer Lehigh University; Member Bar U. S. Supreme Court; Former Examiner U. S. Patent Office. **PATENTS AND TRADEMARKS.** Inventions considered from engineering and legal standpoints. Infringements and extent of patent monopoly investigated for manufacturers. Glad to answer any inquiries.

HIGH-VALUE PATENTS.

Patents that fully protect. Patents that Pay Largest Financial Returns are the kind we obtain. References. **SUCCESSFUL** Inventors and **WELL-KNOWN** Manufacturers. Send 8 cents for new book of extraordinary interest and value to inventors. R. S. & A. B. Lacey, 93 Barrister Building, Washington, D. C. Established 1869.

PATENTS.—Write for how to obtain a patent, list of patent buyers, and inventions wanted. \$1,000,000 in prizes offered for inventions. Send sketch for free opinion as to patentability. Our four books sent free upon request. Patents advertised free. We assist inventors to sell their inventions. Victor J. Evans Co., Patent Attorneys, 712 Ninth St., Washington, D. C.

PATENTS—TRADE-MARKS.—Highest professional service. I personally examine the Patent Office records in regard to and personally prepare and prosecute every application filed through my office. Highest references. Booklet, "The Truth About Patents," and honest advice free. J. R. Kelly, Patent Attorney, 750 Woodward Bldg., Washington, D. C.

PATENTS THAT PROTECT AND PAY.

Advice and books free. Highest references. Best results. Promptness assured. Trade Marks registered. Watson E. Coleman, Patent Lawyer, 624 F St., Washington, D. C.

POSTAL will bring free booklet telling all about patents and their cost. Shepherd & Campbell, Patent and Trade-Mark Attorneys, 732 8th St., Washington, D. C.

PATENT YOUR IDEAS.—\$9000 offered for certain inventions; book, "How to Obtain a Patent," and "What to Invent," sent free upon request; send rough sketch for free report as to patentability. We advertise your patent for sale at our expense. Chandler & Chandler, Patent Attorneys, 978 F St., Washington, D. C.

Patents secured or fee returned. Actual search and report free. Send sketch or model. 1917 Edition, 90-page patent book free. Personal and prompt service. My patent sales service gets full value for my clients. George P. Kimmel, 288 Barrister Bldg., Washington, D. C.

PATENT ATTORNEYS

PATENTS and TRADEMARKS Procured by a former Examining Official of the U. S. Patent Office. **NOELMAN T. WHITAKER,** Attorney-at-Law, Mechanical Engineer, 31 Legal Bldg., Washington, D. C. (Opposite Patent Office.) Inquiries Invited.

INDUSTRIES WANTED

WOODWORKING PLANTS

OPPORTUNITY FOR WOODWORKING INDUSTRIES.—Winchester, Va., pop. 7000, in Shenandoah Valley, is the mouth of a district estimated containing a billion feet of white oak, just being opened by a new railroad; good sites; cheap labor, water, sewer, electricity and gas; temperate climate; on B. & O. and Pennsylvania railroads. City will co-operate with any responsible firm desiring location. Address H. H. Hable, Winchester, Va.

TEXTILE PLANTS

ALBANY, ALABAMA (formerly New Decatur), is in the cotton and iron district of Northern Alabama. On two trunk-line railroads and the Tennessee River. Offers special inducements for big and small industries. Very favorably located for all factories using cotton or cotton goods. Cheap gas, water, light and electric power. Fine opportunities here for skilled operators with limited capital to establish their own business. Financial assistance will be rendered if necessary. Albany is a modern city with 10,000 population and every convenience. Address Board of Commerce, Albany, Ala.

MISCELLANEOUS

SISTERSVILLE, W. VA., on the B. & O. R. R. and Ohio River, situated in the steel district of the United States, offers to all manufacturers: Electric power at 1/2c. per K. W. H. frgs factory sites up to thirty acres; 8c. natural gas, \$1.25 coal, and other equally cheap natural resources. It is the richest city in the United States per capita and one of the best governed. But this is not all. It possesses men whose co-operation is offered financially and otherwise—the type you will want to associate with as a business executive. Write Secretary Chamber of Commerce.

CARLISLE, PENNSYLVANIA, wants men; men of enterprise; men of vision who can establish rated industries. Co-operation will be given to the fullest extent. One of the lowest electric-power rates in the country. Baltimore freight classification. Educational advantages beyond the average city of 10,000 inhabitants. Address Carlisle Chamber of Commerce.

LOCATION WANTED

ANY TOWN desirous of securing an industry that can be started with very small outlay of money and built up to large proportions in a comparatively short time, please communicate with the undersigned and particulars will be furnished. The article is a new invention and patented window screen, and is without question superior to anything of the nature on the market. Unlimited market. Good profits. Simple and easy to make. Almost any woodworking plant can be utilized. Address Owners, Murray & Lindbeck, 172 N. Water St., Rochester, N. Y.

FACTORY SITES

BALTIMORE FACTORY AND TERMINAL SITES.—Statement of Asa G. Candier, President The Coca-Cola Co.: "Investigation convinced us that Baltimore is not only the commercial metropolis for Southern trade, but that it affords shipping opportunities both by water and rail for domestic and foreign traffic superior to any of the great cities in any section of the United States." Locate in Baltimore and derive these advantages. We can provide accommodations to meet your requirements.

"OUR MOTTO":

FACTORY AND TERMINAL SITES IN BALTIMORE. Wm. Martien & Co., Ninth Floor, Lexington St. Bldg., Balto., Md.

VIRGINIA manufacturing plant; large 2-story building on main line two railways; 3 acres ground, office building, stables, 14 building lots; value \$20,000. Will take stock in properly-established manufacturing business. Va. Land Bureau, Inc., Roanoke, Va.

INDUSTRIAL PLANTS FOR SALE

BOX SHOOK FACTORY

WANTED—To correspond with anybody wanting first-class box shook factory, fully equipped for turning out ten cars of shooks weekly; location, railroad facilities and source of supply unexcelled. E. A. Robertson, Box 373, Petersburg, Va.

PLANING MILL

PLANING MILL FOR TRADE.—We have a complete planing mill outfit ready to operate, inventing about \$3500. Also a nice lot of hardwood lumber, about a dozen mantels, tables, desks, etc. Would like to trade this for some land or city property. What have you? Write or call us. The W. H. Coyle Co., Guthrie, Okla.

IRON BED FACTORY

IRON BED FACTORY FOR SALE, with or without real estate. Would move to live town if local people will take stock. Address No. 3063, care Manufacturers Record, Balto., Md.

PROPOSALS

SEWERS WATER-WORKS ELECTRIC LIGHT PLANTS BRIDGES

More Southern Proposal Advertising Is Printed In The Manufacturers Record Than In Any Other Paper

An Ordinance Calling In For Redemption Bonds of the City of San Antonio

BE IT ORDAINED BY THE COMMISSIONERS OF THE CITY OF SAN ANTONIO:

Issue.	Purpose.	Amount.	To Be Paid.
Aug. 1, 1887.	Public Improvements, etc.	\$150,000.00	Feb. 1, 1917
July 1, 1889.	Public Improvements.	50,000.00	Jan. 1, 1917
July 1, 1889.	Street Improvements.	225,000.00	Jan. 1, 1917
July 1, 1889.	Sidewalk Improvements.	10,000.00	Jan. 1, 1917
Sept. 15, 1890.	Construction Bridges.	100,000.00	Mar. 15, 1917
Sept. 15, 1890.	Property Condemned.	75,000.00	Mar. 15, 1917
Sept. 15, 1890.	Sidewalk Improvements.	10,000.00	Mar. 15, 1917
Sept. 15, 1890.	Street Improvements.	50,000.00	Sept. 15, 1917
Sept. 15, 1890.	Electric Fire Alarm.	12,000.00	Sept. 15, 1917
Sept. 15, 1890.	School Buildings.	41,000.00	Sept. 15, 1917

Said bonds being payable in thirty (30) years and redeemable at the option of said City after twenty (20) years, and being in denominations of One Thousand Dollars each, bearing five (5) per cent. interest, excepting Public Improvements issue of 1889, which are for Five Hundred Dollars each and bear six (6) per cent. interest; and

WHEREAS, said City now desires to exercise its option and redeem all of said bonds:

Therefore, The City of San Antonio hereby calls in said bonds for redemption, and all holders thereof are hereby notified to present the same for final payment of all principal and interest due thereon, on the dates "To Be Paid" above set forth, either at the Treasury of said City or at the NATIONAL BANK OF COMMERCE of New York City, which is hereby designated as the New York Fiscal Agency of said City of San Antonio for the payment of said bonds as herein provided; and from and after the respective dates herein above fixed for the redemption of said bonds said City shall not be chargeable with or pay any interest on said bonds. And the City Clerk is hereby directed to cause the publication of this ordinance without certificate three times each in two newspapers in New York City, one in Chicago and one in San Antonio, and all holders of such bonds are hereby required to take notice hereof.

PASSED AND APPROVED this 30th day of October, A. D. 1916.

CLINTON G. BROWN, Mayor.

ATTEST: FRED FRIES, City Clerk.

Bids close March 14, 1917. Steel Bridge

Charleston, W. Va.

Sealed proposals will be received by County Court of Kanawha County, Charleston, West Virginia, until eleven o'clock A. M. Wednesday, March 14th, 1917, for a two-span steel truss bridge over Big Sandy Creek near the Town of Clendenin, Big Sandy District, Kanawha County.

Plans, profiles and specifications will be furnished upon application and cash payment of \$2 to P. J. Walsh, Engineer and General Superintendent, Charleston, West Virginia.

The Court reserves the right to reject any and all bids.

Bids close March 27, 1917. Two Steel Bridges

Sealed proposals for the construction of two steel bridges over Pittman Creek, one on the Monticello Road and one on the Mt. Vernon Road, will be received by the Fiscal Court of Pulaski County at the Court House in Somerset, Ky., until 12 o'clock noon March 27, 1917.

The work to be done is as follows:

Bridge on Monticello Road.	
1 1/2-ft. steel span	158,200 lbs. steel
2 1/2-ft. steel spans	61,320 lbs. steel
134 concrete	509.4 cu. yds.
134 5 concrete	267.8 cu. yds.
134 concrete	56.3 cu. yds.
Handstone	66.9 cu. yds.
Piling	4,305 lineal ft.
Bridge on Mt. Vernon Road.	
1 1/2-ft. steel span	46,750 lbs. steel
134 concrete	29 cu. yds.
134 5 concrete	33 cu. yds.
Reinforced steel	4,556 lbs. steel
Handstone	88 cu. yds.

Plans on file with Commissioner of Public Roads, Frankfort, Ky., and in office of Road Engineer, Somerset, Ky.

W. G. CUNDIEF, Road Engineer.

Attest: C. M. LANGDON, Clerk Pulaski Co. Court.

Bids close March 30, 1917. Road Improvement

Centerville, Tenn., February 23, 1917. Sealed bids for the improvement of public roads in Hickman County, Tennessee, will be received by the Highway Commission of Hickman County until 12 o'clock noon Friday, March 30, 1917, and at that time publicly opened, in the Court House at Centerville, Tennessee.

Proposed improvement includes the grading of approximately forty miles of road, requiring approximately 220,000 cubic yards of excavation, and necessary drainage structures. This improvement will be the first work of a system of roads designated for improvement under the recent \$225,000 bond issue.

Each proposal must be accompanied by certified check of Twenty-five Hundred Dollars (\$2500), payable to T. H. Erwin, Secretary Hickman County Highway Commission. Plans and specifications will be on file at the office of T. C. McEwen, County Engineer, Centerville, Tennessee, on and after March 15, 1917.

A bond to secure performance of contract and the payment of all claims for labor and

material will be required in accordance with Chapter 182, Acts of 1899, State of Tennessee. The Highway Commission reserves the right to reject any and all bids.

(Signed) T. H. ERWIN, Secretary.

Bids close March 26, 1917.

Public Road Work

Panama City, Bay County, Fla.

Sealed proposals will be received until Monday, March 26, 1917, at 2 o'clock P. M., for a system of county roads, including 16 miles of paved roadway, 39 miles of clay-gravel roadway, and 140 miles of cleared and graded roads, also concrete and wooden bridges, in Bay County, Fla., by the Board of County Commissioners at their office in Panama City, Fla. Write Gordon Sumner, County Engineer, for plans and specifications. Address bids to W. H. Marshall, Clerk of the Circuit Court, Panama City, Fla.

GORDON SUMNER, County Engineer, Bay County, Fla.

Bids close March 16, 1917.

Street Paving

Rocky Mount, N. C.

Sealed bids will be received by the Board of Aldermen of the City of Rocky Mount, N. C., up to 2 o'clock P. M. of March 16, 1917, for the paving of Falls road with standard sheet asphalt with concrete base or with bituminous pavement. Bids asked on both kinds; there will be approximately 16,000 square yards of paving. Also for approximately 7000 linear feet of concrete curb and guttering.

Bidders to furnish specifications for the construction of said work.

Bids must be accompanied by certified check for 10 per cent. of amount of bid. The city reserves the right to reject any or all bids. For further information address

C. H. HARRIS, City Clerk, Rocky Mount, N. C.

Bids close April 2, 1917.

Permanent Road Construction

FAYETTE COUNTY.

Fayetteville, W. Va., February 27, 1917. Sealed proposals will be received at the office of the Clerk of the County Court, Fayetteville, West Virginia, until 2 P. M. April 2, 1917, for the grading and draining of the Giles, Fayette and Kanawha Turnpike in Fayetteville District of Fayette County from Beckwith to the Kanawha District line, a distance of 2.5 miles.

Plans, profiles, estimates, et cetera, are on file in the office of J. K. McGrath, District Road Engineer, Mount Hope, W. Va., from whom printed forms for bids, together with specifications and other data, may be secured upon application. Bids must be submitted on the prescribed printed form. Specifications and plans are also on file in the office of the Clerk of the County Court, Fayetteville, West Virginia, but not available for distribution.

A cash deposit of Five Dollars will be required for a set of plans and specifications for each section, the same to be refunded if bid is filed and the plans and specifications returned in good condition within thirty days from date of letting.

Proposals must be filed in the office of the Clerk of the County Court, Fayetteville, W. Va., addressed to the County Court of Fayette County, and marked "Proposal for Improvement of the Giles, Fayette and Kana-

wha Turnpike." All work will be paid for in cash. A certified check for five (5) per cent. of the proposal, made payable to the order of the Sheriff of Fayette County, shall be filed with each bid. The Court reserves the right to reject any or all bids.

J. K. McGRATH, District Road Engineer.

By order of the County Court of Fayette County, W. Va.

PHILIP KONRAD, President.
R. J. STEGALL, Clerk.

Bids close March 14, 1917.

Sewer and Water Extensions

Sealed proposals for the construction of extensions to the sewer and water mains for the City of Madison, Ga., will be received by the Mayor and Council of said city until twelve (12) o'clock noon on the 14th day of March, 1917.

The work will consist of approximately 2.8 miles of cast-iron water mains, 4 to 10 inches in diameter; twenty-seven (27) two-way hydrants, necessary valves and valve boxes; also approximately 3 miles of vitrified sewer pipe, 8 to 10 inches in diameter; thirty-eight (38) manholes, twelve (12) flush tanks, and all appurtenances necessary to build and complete the work in accordance with the plans and specifications as prepared by Solomon-Norcross Company, Engineers, Atlanta, Ga.

Bidders must use the printed forms and address their proposals to "Hon. M. F. Brooks, Mayor," and mark them "Proposals for Constructing Extensions to Sewer and Water Mains."

Proposals will be received, first, for furnishing material and constructing the extensions complete, and, second, for furnishing labor and constructing the extensions, the city to furnish the material for the whole work or any of the subdivisions as shown by the specifications.

Each proposal shall contain in full the name of every person, firm or corporation interested in the same, and address of the person, firm or president and secretary of the corporation bidding, and shall be accompanied by a certified check for an amount equal to five per cent. (5%) of the total amount bid as a guarantee that the contract will be entered into if awarded. A bond for the sum of fifty per cent. (50%) of the amount of the contract, with satisfactory surety, will be required for the faithful performance of the work. Payment will be made in cash for eighty-five (85%) per cent. of monthly estimates.

After award of contract the check, or the amount of said check, of all unsuccessful bidders will be returned upon demand, and the check, or the amount of said check, of the successful bidder, upon the execution of the contract and the furnishing of the required bond.

Plans and specifications are on file at the office of the City Clerk of Madison, Ga., and also at the office of the Solomon-Norcross Company, Engineers, 1625 Candler Bldg., Atlanta, Ga.

Bidders may obtain copy of specifications by enclosing check for \$10, payable to the Engineer, to be held until their return. Blueprints may be had at the cost of blueprinting. The Council reserves the right to reject any and all bids.

M. F. BROOKS, Mayor, Madison, Ga.

SOLOMON-NORCROSS CO., 1625 Candler Bldg., Engineers, Atlanta, Ga.

Bids close March 21, 1917.

Water-Works and Sewer System

Eudora, Arkansas.

Sealed proposals will be received by the Board of Commissioners for the First Water and Sewer Districts of Eudora, Arkansas, on or before 2 P. M. on Wednesday, the 21st of March, 1917, and then publicly opened, for furnishing materials, equipment and supplies and constructing a complete Water-works and Sanitary Sewer System for the said districts in accordance with plans and specifications on file in the office of the Secretary of the Board of Commissioners at Eudora, Arkansas.

Waterworks Improvement District includes furnishing oil engines, pumps, steel tower and tank, fire hydrants, gates, water-pipe and pump house and reservoir.

Sewer Improvement District includes furnishing vitrified sewer pipe and branches, line structures and disposal plant.

Each proposal must be accompanied by a certified check for three per cent. (3%) of the amount of the bid, made payable to the Hon. S. W. Douglas, Secretary, Eudora, Arkansas, as evidence of good faith.

Specifications, form of proposal, contract and plans may be seen at the office of the Commissioners in Eudora, Arkansas, and specifications will be mailed upon application to the Engineer, Xavier A. Kramer, Magnolia, Miss.

The right is reserved to reject any or all bids.

MORRIS SCHWARTZ, Chairman.

S. W. DOUGLAS, Secretary.

XAVIER A. KRAMER, Consulting Engineer, Magnolia, Miss.

Bids close March 22, 1917.

Sanitary Sewerage System and Sewage-Disposal Plant

Separate proposals will be received at the office of Walter G. Franz, Consulting Engineer, Union Trust Bldg., Cincinnati, Ohio, until noon Thursday, March 22, 1917, on the construction of a sanitary sewerage system and a sanitary sewage-disposal plant for the Tuskegee Normal and Industrial Institute, Tuskegee Institute, Ala.

The sanitary sewerage system will consist of 4, 6, 8 and 10-inch vitrified sewer tile, together with the necessary brick manholes, etc.

The sanitary sewage-disposal plant will consist of reinforced concrete screen chamber, Imhoff tank, dosing chamber, settling tank, as well as dosing siphon, chemical treating apparatus, sludge bed, etc.

Plans and specifications may be seen at the office of R. K. Taylor, Director of Industries, Tuskegee Normal and Industrial Institute, Tuskegee Institute, Ala., and at the office of Walter G. Franz, Union Trust Bldg., Cincinnati, Ohio.

Plans and specifications for bidders' use may be obtained from the Engineer upon the deposit with him of a check for \$10, which will be refunded upon the return of the plans and specifications.

Bids close March 23, 1917.

Water-Works Improvements and Electric-Lighting System

Murray, Ky.

Sealed proposals will be received by the Mayor and City Council, Murray, Kentucky, on or before 8 P. M. on Thursday, the 29th of March, 1917, and then publicly opened, for furnishing materials, equipment and supplies and constructing certain Water-works Improvements and building an Electric-Lighting System for the said city in accordance with plans and specifications on file in the office of the Mayor of Murray, Kentucky.

The Water-works Improvements include furnishing oil engines, pumps, well-working equipment and pump house.

The Electric-light System includes furnishing alternators, switchboard, street-lighting equipment, wire, poles and line material.

Each proposal must be accompanied by a certified check for three per cent. (3%) of the amount of the bid, made payable to the Hon. C. M. Smoot, City Clerk, Murray, Kentucky, as evidence of good faith.

Specifications, form of proposal, contract and plans may be seen at the office of the Mayor in Murray, Kentucky, or specifications will be mailed upon application to the Engineer, Xavier A. Kramer, Magnolia, Miss.

The right is reserved to reject any or all bids.

HENRY E. HOLTON, Mayor.

C. M. SMOOT, Clerk.

XAVIER A. KRAMER, Consulting Engineer, Magnolia, Miss.

Bids close April 2, 1917.

Addition To Courthouse

Charleston, W. Va.

Sealed proposals for addition to Kanawha County Court House, for all labor and materials, will be received by County Commissioners until 11 A. M. April 2, 1917, when they will be opened and publicly read.

Plans and specifications may be seen at the office of County Commissioners, also at the office of H. Rus Warne, Architect.

Contractors desiring plans will deposit two certified checks for \$25 each. One check of \$25 will be returned when plans are received at the time of opening the bids, and the other check of \$25 will be returnable if a bona fide bid is received on the date above mentioned.

Each proposal must be accompanied by a certified check of \$500, made payable to Grant Copenhaver, President County Court, which check will be forfeited to the Commissioners for damages sustained in case the bidder within five days fails to enter into contract for the work bid upon and to give a surety bond for the faithful performance of the contract, which bond must also be made a surety bond against all liens. The bond required will be \$25,000. See specifications for other requirements.

Separate bids will be received for plumbing and heating.

All bids must be made on forms furnished with specifications.

The County Commissioners reserve the right to reject any or all proposals for any reason they may deem proper.

GRANT COPENHAVER, President.

Bids close March 14, 1917.

Sewers and Water Mains

Sealed proposals for the construction of extensions to sewers and water mains for the City of Madison, Georgia, will be received by the Mayor and Council until noon of March 14. Two and eight-tenths miles water main, four to ten inches; twenty-seven hydrants; three miles sewer pipe, twelve to ten inches; thirty-eight manholes; eight to ten flush tanks. Plans and specifications can be obtained from Solomon Norcross Company, Engineers, Atlanta, Ga.

M. F. BROOKS, Mayor, Madison, Ga.

(CONTINUED ON NEXT PAGE.)

PROPOSALS

SEWERS WATER-WORKS ELECTRIC LIGHT PLANTS BRIDGES

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Bids close March 29, 1917.

Hospital Building

Proposals for the erection of a four-story Hospital Building in the City of Charleston, S. C., will be received by the undersigned up to 12 o'clock noon Thursday, March 29, 1917.

Bids will be received for the building complete, also for the building complete except Heating, Plumbing, Electric Wiring and Elevators, bids for which will be received separately.

Each bidder will be required to deposit with his bid a certified check for two (2%) per cent. of his bid as a guarantee that he will enter into contract with the Building Committee should the work be awarded to him. Checks to be made payable to R. S. Cathcart, M.D., Chairman.

The successful bidders will be required to enter into a surety company's bond for twenty (20%) per cent. of his bid for the faithful performance of his contract.

The Building Committee reserves the right to accept or reject any or all bids.

Plans and specifications may be had by applying to Todd, Simons & Todd, Architects, 63 Broad Street, Charleston, S. C., by the deposit of a certified check for twenty-five (\$25) dollars, fifteen (\$15) dollars of which will be returned upon surrender of the plans and specifications in good condition, together with a bona fide bid for the work.

TODD, SIMONS & TODD,

Architects,
63 Broad Street,
Charleston, S. C.

Bids close March 24, 1917.

Addition To Dormitory

AGRICULTURAL AND MECHANICAL COLLEGE.

Agricultural College, Miss.

Sealed proposals, addressed to Hon. W. H. Smith, President, will be received by the Board of Trustees at the Agricultural and Mechanical College until 10 A. M. March 24, 1917, at the office of the President, for the construction of a brick addition to dormitory building. Bids will be asked on the plumbing, heating and electrical wiring at the same time, but separately.

Plans and specifications are on file at the office of Hon. W. H. Smith, President Agricultural and Mechanical College, and Xavier A. Kramer, Consulting Engineer and Architect, Magnolia, Miss.

Plans, specifications and blank forms for proposal can be had of the Architect upon a deposit of \$25 to guarantee their safe return.

As evidence of good faith, each proposal must be accompanied by a certified check of 2 per cent. of the amount of bid, made payable, without qualification, to Hon. W. H. Smith, President.

The right to reject any or all bids is reserved.

Done by order of the Board of Trustees Agricultural and Mechanical College.

W. H. SMITH, President.
O. F. LAWRENCE, Secretary.

Bids close March 27, 1917.

Electrical Illumination

OF GROUNDS AND BUILDINGS OF THE MISSISSIPPI CENTENNIAL EXPOSITION COMPANY.

Proposals will be received at the office of the undersigned until ten o'clock Tuesday, March 27, 1917, for furnishing all materials and constructing the electrical system on the grounds and in buildings of the Mississippi Centennial Exposition.

Bidders will apply to A. W. Lewin, 631 Audubon Building, New Orleans, La., Electrical Engineer, of the Mississippi Centennial Exposition Company, for plans and instructions.

Bids will be accompanied by a certified check for five per cent. of the amount or a satisfactory bidding bond. Right is reserved to reject any and all proposals.

For further information address A. W. Lewin, Electrical Engineer, or

JOHN T. CONNELL,
Director of Works,
Gulfport, Miss.

Heating Plant

Notice.—The Board of Commissioners of Rockingham County desire bids for installing heating plant in courthouse at Wentworth, N. C. Communicate with J. P. McMichael, C. B. C., Wentworth, N. C.

Bids close March 22, 1917.

Ditch Construction

Morganfield, Ky.

Sealed bids will be received by the Board of Drainage Commissioners of Union County, Ky., up until 12 o'clock noon Thursday, March 22, 1917, for the construction of the H. A. Roberts Public Ditch, at the office of the Drainage Board, Morganfield, Ky.

Work consists of approximately 7 miles of open ditch, approximately 225,000 cubic yards earth excavation, 2½ miles lateral work, 40,000 cubic yards earth excavation, and 10 acres clearing.

Plans and specifications may be seen at the County Clerk's office or at the office of Norman R. Orcutt, Chief Engineer, Morganfield, Ky.

All bids must be accompanied by a certified check for \$1000, and the right is reserved to reject any and all bids. The bidder to whom the contract is let will be required to give bond for 75 per cent. of the total cost of his bid.

Copy of profile may be had from the Engineer for \$3. Bidding blanks and specifications furnished upon request. All bids to be addressed to A. E. Long, Secretary, Drainage Commission, Morganfield, Ky. Work to be completed within one year from date of signing of contract.

NORMAN R. ORCUTT,
Chief Engineer,
Morganfield, Ky.

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